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HISTORY

OF THE

INDIANA STATE DENTAL ASSOCIATION

1858-1882.

ALSO,

TRANSACTIONS

OF THE

TWENTY-FOURTH ANNUAL SESSION

JUNE 27th, 28th and 29th,

1882

INDIANAPOLIS, IND.

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Indiana State Dental Association.

1858-1882.

A preliminary meeting of the dentists of the city of Indianapolis, Ind., was held at the office of Dr. J. F. Johnson on the 28th day of September, 1858.

On motion, Dr. J. F. Johnson was called upon to preside, and Dr. G. C. North was appointed Secretary.

After due deliberation it was

Resolved, That the dentists of the state generally be invited to attend a convention to be held in Indianapolis on the 28th day of December, 1858, for the purpose of forming a State Dental Association.

In compliance with the above request a number of resident dentists of the State of Indiana met in Ramsey's Hall, Indianapolis, on the 28th day of December, 1858.

Upon motion, the chairman, Dr. J. F. Johnson, was requested to appoint a committee of five to draft and present a constitution and by-laws for the permanent organization and government of a State Dental Association.

Drs. G. C. North, P. G. C. Hunt, R. H. Hurd, S. B. Smith, and G. Lupton were appointed upon that committee and presented a constitution and by-laws, which were adopted under the title of "The Constitution of the Indiana State Dental Association."

The gentlemen there present then signing the constitution constituting the charter members, and were as follows:

J. F. Johnson.....Indianapolis.
T. M. Nichols.....Indianapolis.
P. G. C. Hunt.....Indianapolis.
G. C. North.....Indianapolis.
A. M. Moore.....Lafayette.
J. P. Ulery.....Rising Sun.
John Hood.....Greensburg.
S. B. Smith.....Terre Haute.
H. R. Hurd.....Attica.
George Lupton.....Shelbyville.
H. Salteract.....Franklin.
L. W. French.....Greensburg.
G. B. Harland.....Danville.
W. R. Webster.....Richmond.
C. C. Dills.....New Castle.

The election of officers being now in order, resulted as follows.

President—J. F. Johnson, Indianapolis.

Vice Presidents—Drs. J. P. Ulery, P. G. C. Hunt, and A. M. Moore.

Recording and Corresponding Secretary—G. C. North.

Treasurer—T. M. Nichols.

The first convention occupied two days and adjourned to meet in Indianapolis the first Tuesday in January, 1860.

The second annual meeting occurred as per adjournment, on January 3d, 1860, in the State Board of Agriculture rooms, at which time Dr. I. Knapp, of Fort Wayne, was elected President, with Drs. P. G. C. Hunt, John Hood, and J. P. Ulery as Vice Presidents; T. M. Nichols, Treasurer; S. B. Smith, Terre Haute, Recording and Corresponding Secretary.

The third annual meeting occurred in hall of Y. M. C. A. in Indianapolis, on January 2, 1861, at which time the follow-

ing officers were elected: President, Dr. P. G. C. Hunt, of Indianapolis. Vice Presidents, J. F. Canine, Columbus; A. M. Moore, Lafayette; P. W. Morris, Greensburg. Secretary, S. B. Smith, Terre Haute; Treasurer, G. A. Wells. The association adjourned to meet in the city of Lafayette on the second Tuesday of July, 1861.

The meeting ordered for July, 1861, was, by order of the President, postponed for reasons set forth in circular then issued, signed S. B. Smith, Recording Secretary. In November notice was given that the annual session of the association would be held at Lafayette, commencing the second Tuesday of January, 1862. Pursuant to a call the members of the Indiana State Dental Association met in the office of Dr. A. M. Moore, January 14, 1862. There not being a constitutional quorum present, an informal organization was made by selecting Dr. P. G. C. Hunt as Chairman and S. B. Smith as Secretary.

The fourth annual meeting was held in Indianapolis, in the Supreme Court room, on July 7, 1862. Dr. P. G. C. Hunt called the meeting to order and J. F. Johnson was appointed Secretary *pro tem.* Nothing of importance seems to have been done at this meeting, and they adjourned to meet in Indianapolis on the second Tuesday of July, 1863. There was no meeting of the Indiana State Dental Association during the year of 1863, as the Secretary says, "no doubt on account of the disturbed condition of the country."

The fifth meeting was held in "Ames Institute," Indianapolis, Tuesday, June 28, 1864, at which time Dr. P. G. C. Hunt was still President, as the meeting was called to order by him. But at this session the following were elected: President, Dr. A. M. Moore; Vice Presidents, J. F. Canine, D. M. Weld, C. C. Burgess; Recording and Corresponding Secretary, J. Richardson, Terre Haute; Treasurer, G. A. Wells.

The sixth annual meeting was held in Indianapolis, in rooms of Indiana Medical Association, on June 27, 1865, at which time the following officers were elected: Dr. J. Richardson, Terre Haute, President; Vice-Presidents, P. G. C. Hunt, C. C. Burgess, P. W. Morris, of Greensburg; Recording and Corresponding Secretary, J. F. Johnson; Treasurer, G. A. Wells.

The seventh annual meeting was held in the Y. M. C. A. rooms, Indianapolis, June 26, 1866, at which time there was elected, President, Dr. I. Knapp, Ft. Wayne; Vice-Presidents, W. R. Webster, W. F. Morrill, A. E. Pursell; Secretary, J. F. Johnson; Treasurer, G. A. Wells.

The eighth annual meeting was held in Indianapolis, Chamber of Commerce rooms, June 25, 1867, and for President elected Dr. W. F. Morrill, of New Albany; Vice-Presidents, E. M. Morrison, J. B. Harlan, Merit Wells; J. F. Johnson, Recording and Corresponding Secretary; G. A. Wells, Treasurer.

The ninth annual meeting was held in Indianapolis, in rooms of Y. M. C. A., June 30th, 1868, at which time Dr. S. M. Goode, of Madison, was elected President; Vice-Presidents, W. C. Stanley, E. Trotter; Secretary, E. M. Morrison, Treasurer, C. C. Burgess.

The tenth annual meeting was held in Indianapolis, in the rooms of the Y. M. C. A., on the 29th day of June, 1869. Officers elected: President, J. F. Johnson, Indianapolis; Vice-Presidents, A. M. Moore, W. H. Pifer; Secretary, S. B. Brown; Treasurer, C. C. Burgess.

The eleventh annual meeting was held in Indianapolis, in lecture-room of the Indiana Medical College, on Tuesday, June 28, 1870, and at this meeting there was elected Dr. W. C. Stanley, of Dublin, President; Vice-Presidents, E. V. Burt, W. L. Heiskell; Treasurer, C. C. Burgess; Secretary, S. B. Brown.

The twelfth annual meeting was held at rooms of Allen County Agricultural Society, Ft. Wayne, Tuesday, June 27, 1871, and elected the following officers: President, P. G. C. Hunt, Indianapolis; Vice-Presidents, A. O. Rawls, W. L. Andrews; B. P. McDonald, Secretary; Treasurer, I. Knapp.

The thirteenth annual meeting was held in Indianapolis, in rooms of Indiana Medical College, June 25, 1872. At this meeting the following officers were elected: President, J. Richardson, Terre Haute; Vice-Presidents, E. M. Morrison, H. T. Manlove; Treasurer, J. F. Johnson; Secretary, B. P. McDonald.

The fourteenth annual meeting was held at New Albany, in Templars Hall, on June 3, 1873. (Joint session of Indiana and Kentucky Associations.) Officers elected: President, Merit Wells, Indianapolis; Vice-Presidents, S. B. Brown, W. E. Driscoll; Secretary, B. P. McDonald; Treasurer, J. F. Johnson.

Fifteenth annual meeting was held in Indianapolis, on June 30, 1874. Election of officers showed: Dr. John R. Clayton, Shelbyville, President; J. W. Ellis and J. A. Turner, Vice-Presidents; Secretary, W. B. Knapp; S. M. Goode, Treasurer.

Sixteenth annual meeting was held in Indianapolis, in rooms of Indiana Medical College, on Tuesday, June, 29, 1875, electing J. K. Jamison, President, and for Vice-Presidents, W. B. Knapp, Thos. S. Hacker; Secretary, J. R. Clayton; Treasurer, S. M. Goode.

Seventeenth annual meeting was held in Indianapolis, in the College of Physicians and Surgeons, June 27, 1876. Officers elected were: President, Isaac Knapp; Vice-Presidents, T. S. Hacker and M. H. Chappell; S. M. Goode, Treasurer; J. E. Cravens, Secretary.

Eighteenth annual meeting was held at Ft. Wayne, in Armory of Ft. Wayne Light Guards, on June 26, 1877. Officers

elected; President, Thomas S. Hacker; Vice-Presidents, F. M. Burket, S. C. Carter; Treasurer, Merit Wells; Secretary, J. A. Turner.

Nineteenth annual meeting was held in Indianapolis, in parlors of Bates House, on June 25, 1878. There was elected at this meeting, for President, Dr. W. L. Heiskell, Indianapolis; Vice-Presidents, M. H. Chappell, S. B. Brown; Secretary, J. A. Turner; Treasurer, Merit Wells.

Twentieth annual meeting was held in Indianapolis, in Wright's Hall, on June 24, 1879. Officers elected; Dr. S. M. Goode, Indianapolis, President; Vice-Presidents, R. VanValzah, S. T. Kirk; Treasurer, Merit Wells; Secretary, W. H. Hall. The Association was incorporated January 10th, this year, by order of the nineteenth session (1878).

Twenty-first annual meeting was held in Indianapolis, on June 29, 1880, in the rooms of the Indiana Dental College, on east Market street, and the following officers were elected: President, Dr. R. VanValzah; Vice-Presidents, S. T. Kirk and E. V. Burt; Secretary, W. H. Hall; Treasurer, M. Wells.

Twenty-second annual meeting was held in Indianapolis, in the rooms of the Indiana Dental College. Officers elected: President, Dr. S. T. Kirk, Kokomo; Vice-Presidents, J. E. Cravens, J. A. Turner; Secretary, R. W. VanValzah; Treasurer, Merit Wells.

Twenty-third annual meeting was held in Indianapolis, in rooms of Indiana Dental College, on Tuesday, June 27, 1882. Officers elected: President, Dr. J. E. Cravens, Indianapolis; Vice-Presidents, T. A. Goodwin and T. H. Martin; Secretary, R. W. VanValzah; Treasurer, Merit Wells.

ARTICLES OF ASSOCIATION

OF THE

INDIANA STATE DENTAL ASSOCIATION.

Recorded in Book of Miscellaneous Record, in the Recorder's Office of Marion County, Indiana, and in the office of the Secretary of State of Indiana, at Indianapolis, January 10th, 1879.

The following articles were adopted by the Association at the session held June 20th, 1879:

WHEREAS, The subscribers hereto are desirous of forming an incorporated company for the purposes hereinafter set forth, under and in pursuance of an Act of the General Assembly of the State of Indiana, entitled "An Act concerning the organization and perpetuity of Voluntary Associations, and repealing former laws in reference thereto. Approved February 12, 1855, and repealing each Act repealed by said Act, and authorizing gifts or devises by will to be made to any corporation or purpose contemplated by this Act. Approved February 20, 1867, and the Acts amendatory thereof and supplemental thereto."

THEREFORE, For the purpose of perfecting such incorporation, we, the subscribers hereto, do make, adopt and subscribe to the following Articles of Association, to-wit:

First. The corporate name adopted by this Association, hereby organized, is the Indiana State Dental Association.

Second. The objects of said Association shall be to contribute to the elevation of the dental profession in Indiana, by encouraging a free and liberal interchange of opinions on methods of practice, and the literary discussion of subjects relating to Dentistry; to advance the standard of dental education; to promote the usefulness, honor and interests of its members; and to enlighten and direct public opinion in regard to the duties, responsibilities and requirements of the dental profession.

Third. The names and places of residence of each member of this Association are as follows, to-wit:

William L. Heiskell .....Indianapolis.
Phineas G. C. Hunt .....Indianapolis.
Merit Wells.....Indianapolis.
Junius E. Cravens.....Indianapolis.
C. C. Burgess.....Indianapolis.
Oscar A. Beeks.....Indianapolis.
Thomas S. Hacker.....Indianapolis.
Samuel M. Goode.....Indianapolis.

Fourth. The Corporate Seal of this Association shall consist of a circular die, with the word "Seal" in the center, and surrounded on the outer edge thereof with the words [SEAL.] "Indiana State Dental Association," an impression of which seal is hereto attached.

Fifth. The officers who shall manage the business and prudential concerns of this Association, shall be elected by ballot, and the majority of the votes cast at any such election of officers shall be necessary to a choice of the person for the office for which he may be voted for, and seven active members of said Association shall constitute a quorum for the transaction of business.

In witness whereof, we have hereunto severally subscribed our names this 10th day of January, A. D., 1879.

WILLIAM L. HEISKELL, Indianapolis.
PHINEAS G. C. HUNT, Indianapolis.
MERIT WELLS, Indianapolis.
JUNIUS E. CRAVENS, Indianapolis.
C. C. BURGESS, Indianapolis.
OSCAR A. BEEKS, Indianapolis.
THOMAS S. HACKER, Indianapolis.
SAMUEL M. GOODE, Indianapolis.

The above incorporators, being the lawfully empowered persons to transact business of said Association, met, pursuant to a call in special session on the 30th day of January, 1879, in the city of Indianapolis, for the purpose of admitting members and transacting such other business as was deemed necessary.

By unanimous ballot it was then and there "Resolved: That all dentists who were active members of the unincorporated society known as the Indiana State Dental Association, at the time of adjournment of its last session, the 28th of June, 1878, are hereby declared to be members of the incorporated society, known as the "Indiana State Dental Association."

All officers of the former Association were re-elected for the unexpired term, until the regular annual session to be held in June, 1879.

The President re-appointed all of his former committees, so that the Indiana State Dental Association is to-day the same in every feature as at the adjournment last June, with the single exception that she has a legal status.

AN ACT

TO REGULATE THE PRACTICE OF DENTISTRY IN THE STATE OF INDIANA.

[APPROVED MARCH 29, 1879.]

SECTION 1. *Be it enacted by the General Assembly of the State of Indiana,* That it shall be unlawful for any one to practice dentistry for a fee or reward in the State of Indiana, without having received a diploma from a dental college duly incorporated under the laws of this or some other State of the United States, or a certificate of qualification issued by a board of examiners to be appointed by the Indiana State Dental Association; *Provided,* That nothing in this act shall apply to any one engaged in the practice of dentistry in this State, at the time of the passage of this act.

SEC. 2. A board of examiners, consisting of five practicing dentists, shall be appointed by the said State Dental Association, according to its by-laws, whose duty it shall be to meet annually at the time and place of meeting of said State Association, or oftener, at the call of three members of said board, at such time and place as may be designated in said call, and to examine all applicants and issue certificates to all who pass a satisfactory examination.

SEC. 3. Any applicant who furnishes satisfactory proof of having been engaged in a reputable practice of dentistry for ten

consecutive years, immediately preceding the time of their application, shall be examined only in practical dentistry, operative and mechanical; all others shall be examined in anatomy, physiology, pathology, therapeutics, chemistry and the theory and practice of surgical and mechanical dentistry.

SEC. 4. All certificates, issued under the provisions of this act, shall be signed by all the members of said board of examiners and have the seal of the Indiana State Dental Association affixed, and shall be *prima facie* evidence of the right of the holder to practice under this act, which right it shall be incumbent upon the holder to prove in all prosecutions under the same.

SEC. 5. Any member of the board of examiners may grant a permit to practice until the meeting of the board, but such permit shall be valid only until said next meeting, and in no case be extended or renewed.

SEC. 6. Any person violating the provisions of this act shall be liable to prosecution upon complaint of any citizen of this State before a justice of the peace, or in any court of competent jurisdiction, by indictment or information in the county where the offense is committed, and upon conviction, shall be fined in any sum not less than fifty, nor more than one hundred dollars for each offense: *Provided*, Nothing in this act shall be so construed as to prevent physicians or surgeons extracting teeth; and all fines so collected, shall belong to the common school fund of the county where assessed.

SEC. 7. To provide a fund to carry out and enforce the provisions of this act, the board of examiners shall, before examination, collect from each applicant the sum of twenty-five dollars; any portion of which there may be remaining, after paying necessary expenses attending such examinations, shall be

paid into the treasury of the said State Association, to be used for the purpose for which said fund is hereby created.

SEC. 8. Three members of the board of examiners shall constitute a quorum, and all questions before them shall be decided by a vote of the majority of those present, and should there not be a quorum present on the day of meeting, those present may meet and adjourn from day to day until there is a quorum present.

SEC. 9. The board shall receive, out of the fund created by this act, such compensation for their services as the by-laws of said State Dental Association may provide.

SEC. 10. This act shall be in force from and after its passage, publication and circulation in the several counties of the State.

INDIANA STATE DENTAL ASSOCIATION.

TWENTY-FOURTH SESSION, JUNE 27TH, 1882.

OFFICERS.

S. T. KIRK, KOKOMO,	PRESIDENT.
R. W. VAN VALZAH, TERRE HAUTE,	SECRETARY.
J. E. CRAVENS, INDIANAPOLIS,	FIRST VICE PRESIDENT.
J. A. TURNER,	SECOND VICE PRESIDENT.
M. WELLS, INDIANAPOLIS,	TREASURER.

EXECUTIVE COMMITTEE.

J. B. MORRISON, CHAIRMAN,	INDIANAPOLIS.
W. H. HALL,	TERRE HAUTE.
W. E. SWIGERT,	SPENCER.

TRUSTEES.

J. E. CRAVENS,	INDIANAPOLIS.
O. A. BEEKS,	INDIANAPOLIS.
C. C. BURGESS,	INDIANAPOLIS.

STATE BOARD OF EXAMINERS.

P. G. C. HUNT, PRESIDENT,	INDIANAPOLIS.
M. H. CHAPPELL, SECRETARY,	KNIGHTSTOWN.
S. T. KIRK,	KOKOMO.
S. B. BROWN,	FORT WAYNE.
J. RICHARDSON,	TERRE HAUTE.

TWENTY-FOURTH ANNUAL SESSION

OF THE

INDIANA STATE DENTAL ASSOCIATION.

MORNING SESSION—FIRST DAY.

TUESDAY MORNING, JUNE 27, 1882.

The Indiana State Dental Association convened in twenty-fourth annual session on Tuesday, 27th June, 1882, at 10 A. M., in the rooms of the Indiana Dental College, Ætna Block, North Pennsylvania street, in the city of Indianapolis.

PROGRAMME OF EXERCISES.

1. MECHANICAL DENTISTRY—Construction of set of teeth with the New Mode Heater on Rubber and Celluloid.
   W. W. EVANS, Washington, D. C.
   - *a.* Models illustrating Articulation of Artificial Teeth, with a paper by.....W. E. DRISCOLL.
   - *b.* Arrangement according to Nature.....T. S. HACKER.
2. OPERATIVE DENTISTRY.
   - *a.* Preparation of Cavities..... } F. M. HAMSHER.
   - *b.* Different kinds of Gold and their uses... } D. L. OVERHOLTZER.
3. PIVOT TEETH AND PORCELAIN SECTIONS.
4. CHEMISTRY.
   - *a.* Acids and their effects as manifested upon the Dental Organs.
     S. B. HARRIMAN, A. L. STEVENSON.
   - *b.* Chemical Facts about Filling Materials.....J. N. HURTY.

5. Pathology and Therapeutics.....Joseph Richardson.
6. Plastic Fillings—Permanent and Temporary.....W. N. Wilson.
7. Dental Literature and Education.....W. H. Hall.
8. The Indiana State Dental Association. (Voluntary.)

EVENING SESSIONS.

First Evening. Development of Teeth—Lantern Illustrations...J. R. Clayton.
Second Evening. Regulation of Teeth—with Models and Plates..M. H. Chappell.
Question Box.

The Association was called to order by the President, Dr. S. T. Kirk, of Kokomo, who commented briefly on the unusually large attendance at the opening hour and of the gratifying prospect of an interesting and profitable session.

Rev. J. K. Pye was introduced, and invoked the divine favor upon the Association and its work.

The remainder of the forenoon session was devoted to routine business. The roll was called. The Treasurer's report was received, and accounts audited and approved.

The following gentlemen were appointed a board of censors to examine and report upon applications for admission of new members: Drs. H. N. Wilson of Richmond, F. M. Hamsher of Delphi, and G. W. Loag of Fort Wayne.

Adjourned to 2 o'clock p. m.

AFTERNOON SESSION—FIRST DAY.

Association called to order, at 2 p. m., by the President, Dr. Kirk.

Drs. J. E. Cravens of Indianapolis, S. B. Brown of Fort Wayne, and W. L. Heiskell of Indianapolis, were appointed a committee to publish the transactions of the Association.

The regular programme was now taken up. The first subject was *Mechanical Dentistry.* A motion was made that this (first) subject be postponed until Wednesday morning (28th) in order to accommodate a demonstration by Dr. W. W. Evans, of Washington, D. C. Motion carried.

The second subject—*Operative Dentistry*—was then called. This subject was divided under two heads: *a.* Preparation of Cavities; *b.* Different Forms of Gold. Drs. F. M. Hamsher, of Delphi, and D. L. Overholtzer, of Logansport, read the following papers:

PREPARATION OF CAVITIES FOR THE RECEPTION OF GOLD.

BY F. M. HAMSHER.

Mr. President and Gentlemen:

In order to understand how to properly prepare a cavity for filling, we must first know the composition of the teeth and learn the character of the destructive agents.

A brief statement of the anatomy and physiology of dentine and enamel, and the principal causes that produce caries, must be the stepping stones in explanation of the theory we wish to discuss.

The dentine is the larger portion of the tooth structure. In density it ranks next to enamel. It contains seventy-two per cent. of organic matter and consists of an infinite number of tubuli and inter-tubular substance, which is dense and granular.

The tubuli are wavy in their course, extending from the periphery of the dentine to the pulp-chamber, averaging one-ten-thousandth of an inch in diameter. They sometimes divide in their course, anastomose with each other and the canaliculi of the cementum.

From the pulp, along the tubuli, pass fibrillæ, which perform the function of nerves; and like them, are most sensitive at their peripheral terminations.

There are also transmitted nutrient fluids, which supply both the organic and inorganic substance.

The inter-tubular substance consists of fine granules; is transparent, and forms the bond of union of the tubuli.

The enamel is the harder portion of the tooth substance, and contains the smaller part of organic matter. It is composed of hexagonal rods or prisms, radiating in a direction parallel with the tubuli. They are so adapted and fitted together that there is scarcely any space between them, the ends adapted with the dentine. The office of enamel is to cover and protect the tooth, and a tooth that is robbed of this protection in any way will soon succumb to the influence of the destructive agents. We see by the structural arrangement of the prisms that the greatest possible strength and power of resistance are attained.

We believe "dental caries" results from *chemical*, not galvanic action. Caries generally attacks first those points that are least exposed to friction, where food is allowed to remain, which decomposing, generates certain acids. We have three prominent varieties of caries, the white, brown and black, but the limits of this paper will not permit speaking of the different acids that produce each variety of caries.

The foundation principle in the preparation of a cavity is the removal of the causes that produce the caries, or so shape the cavity that it will, of itself, change the condition, for we must have a changed condition after filling, or it will be only a question of time before the tooth will be again attacked by caries and our filling be undermined.

Our first step should be a thorough examination not only of the tooth or teeth to be operated upon, but of the whole oral cavity. If any teeth are found too much broken down to admit of successful filling or the placing on of a Bonwell or Richmond crown, they should be extracted and all foreign substances around the necks of the teeth be removed.

We are now, or should be, perfectly acquainted with the condition of the patient's mouth and teeth, and are ready to operate.

Cavities of decay are classified under several different heads, but it will answer our present purpose to speak of but two, crown and approximal.

With the former class, we open the cavity, remove the softened portion of decay with the excavator, then apply the rubber dam (holding it in place with the clamp or floss silk when the teeth are of such a shape that it is liable to slip off) remove the remaining decay, and shape the cavity with the engine.

If the caries is deep-seated, we leave a layer of softened dentine over the pulp-chamber where its removal would be liable to expose the pulp. But the walls of the cavity we cleanse thoroughly, and remove all disintegrated enamel and dress the borders of the cavity down smooth and firm, blowing out all fine loose particles with the hot-air syringe. When the caries is deep-seated, whether there is softened dentine left or not, we flow the cavity with carbolic acid; after thoroughly drying, we cover the bottom with Weston's cement, waiting a few moments for it to harden.

We are ready for the gold.

The preparation of approximal cavities is far more difficult. Here more depends upon the good judgment of the operator, in the way he prepares the cavity, than upon his ability to pack and finish the gold.

With all patients, whether young or old, when the teeth are soft and are very sensitive and affected with white decay, we simply remove the softened portion of decay and fill with gutta-percha or cement, leaving it so for several months before attempting to insert the gold. Sometimes removing this temporary filling, shaping the cavity and refilling with cement for several months longer. The cause of so many failures with this class of teeth is due to haste in preparing the cavities and inserting the gold, not allowing nature sufficient time to fortify. With the darker variety of caries this treatment is not necessary.

In the preparation of cavities, in incisors and cuspids, after applying the rubber dam, we separate with the wedge, and with the engine and a small inverted cone bur we remove the caries and

shape the cavity by making the bottom a little larger than the orifice. In case the cavity is long and shallow, or deep-seated and extending to or near the cutting edge, we cut small grooves along the palatal and labial walls, with a very small retaining pit in one or both of the grooves at the base.

We avoid making retaining pits, or leaving frail portions of enamel at the cutting edge of incisors. If the labial border is firm, we cut from the palatal, finishing the borders down smooth and firm, being careful in shaping and finishing the borders so that the enamel prisms can be easily protected by the gold.

In the preparation of approximal cavities in bicuspids and molars we open from the grinding surface well, so that we have free access to every part of the cavity, cutting the palatal and buccal borders away, so that when they are filled they will be perfectly free, dressing them down smooth, and beveling the edges slightly, putting one or two very small retaining pits at the base. Where the teeth are badly broken down so that the beveled edges are not sufficient to retain the gold, we cut grooves, the same as for the incisors. After all, no matter how thorough the preparation of the cavity, or how perfectly the gold be packed, or how finished, if the teeth are allowed to return to their former condition, our work will be lost; for we can not secure permanent exemption from decay, unless an entire changed condition is produced, either by contours or nuckels of gold in such a way that the spaces are self-cleansing or admit of easy cleansing.

To sum it all up, there are but two points:

First. Be thoroughly acquainted with the formation of the teeth and the causes that produce caries.

Second. Use your best judgment in discriminating where, when and how to cut, and success is sure to follow.

PREPARATION OF CAVITIES.

BY D. L. OVERHOLTZER.

My subject, if old, is at least practical; hence, I proceed to its consideration without apology or introduction, begining with cavities in the grinding surface of molars and bicuspids. In very hard teeth with slight decay, confined to black fissures running in different directions, unless well managed the preparation of the cavity may prove quite a task. In many such cases I find a rather small, hard, square drill on the engine applied at different points, very efficient in preparing the way for the application of gauge chisels, inverted cone burs, triangular drills, and corundum points, by means of which the removal of decay and proper shaping for the retention may be speedily completed, after which it only remains to smooth and bevel the edges, which can usually be best done with a properly shaped corundum point on the engine. Cavities in the same situations where decay is more extensive, are generally most conveniently opened with gouges and shouldered chisels. In lower teeth, gouges with the points bent at right angles so that the shaft stops the stroke, are almost indispensable in breaking down the overhanging enamel. For the removal of soft decay, after the cavity has been fairly opened, I find spoon-shaped excavators, with different curved handles, especially useful. In cases of deep decay, my practice is in accordance with the now generally accepted theory, that the natural covering of the pulp, even if that is partly decomposed dentine, is better than any artificial covering; hence, if I can get a solid border of dentine around the inside of the cavity without uncovering the pulp, I never uncover it.

Approximal cavities in molars and bicuspids will be next considered. The first step usually is to open the cavity through the grinding surface. Sometimes a square or triangular engine drill is used, but more frequently a gouge chisel is best; this is followed by different kinds of excavators, burs, square or

triangular drills, or corundum points, as seem most convenient, until the cavity is properly cleansed and shaped, which, in such cases, frequently includes a dovetail in the grinding border of the cavity. Where much solid tooth substance is to be cut away, square and triangular engine drills and corundum points, next to gouges and chisels, are my chief reliance.

After a cavity has been thus far prepared, there is usually but a small surface of contact with the adjoining tooth. The space needed for finishing the filling, is usually easily made by running a thin, flat file, or diamond disk between. If, as is very commonly the case, another cavity exists immediately opposite in the adjoining tooth, access may frequently be had to the latter through the cavity already prepared, and if there is sufficient strength to warrant leaving it, the grinding wall need not be broken in. Excavators of different forms and sizes will enable the operator to properly cleanse and shape the cavity. In buccal and labial cavities, where there is considerable decay, and especially if there is projecting enamel, the gouge chisel again comes first, to be followed by excavators and different forms of engine drills. In cavities where it is impossible to get a direct action of the engine at desired points, the right angle attachment comes in charmingly. This is true, not only in this class of cavities, but often on the grinding surfaces, and especially on posterior surfaces, where the adjoining teeth are gone. So useful have I found this attachment that I consider the help I get from it the best I get from the engine; hence, I should think my engine very incomplete without it.

In the last two classes of cavities, there are occasionally found cases where the cavity is to a greater or less extent occupied by the gum, or a very vascular growth from the gum or pulp, which on the slightest touch, bleeds profusely. In such cases, the first step is the removal of this obstruction, which may be done with suitably shaped lancet or excavator, followed by an application of chloride of zinc on cotton. Where the growth has been of considerable extent, it is often necessary to defer further proceedings to a later sitting, in which case the clearing of the cavity may be facilitated by the introduction of cotton

saturated with sandarac varnish in such a way as to keep away the offending tissue. Should there be a tendency to bleed at a later sitting, it may usually be checked by another touch of the chloride of zinc.

The last class of cavities to be considered are proximal cavities in incisors and cuspids. In this class, where the teeth are close together and decay not very extensive, the first step is to get space to operate. Although violently denounced in one of our late meetings, I still believe slow wedging decidedly the best plan for procuring the space indispensable for the successful performance of the operation of filling. For wedges I find rubber to be the most convenient and satisfactory. Where the teeth are very close, I begin with a strip of cofferdam rubber, which is followed with strips of gradually increasing thickness. In this way, in from two to four days, according to the situation, I can get satisfactory space with little inconvenience or pain to the patient. By giving the patient the needed variety of rubber strips, and showing him how to introduce them, he can generally introduce them himself or have it done by his friends. The great pain and injury which we are sometimes told come from the use of rubber wedges, come rather from their misuse. The rubber can be got of the stationers, in the form of bands. Occasionally a patient who has been equipped for the wedging process, will return at the time appointed for filling, who, for some cause, has failed to apply the rubbers as directed. In such a case I would emphatically say postpone the operation until the first essential is met, although it may put both patient and operator to inconvenience. I have a distinct recollection of a case in which failing to follow this rule, I worried through the operation of inserting a couple of fillings, which afterwards proved failures, and which I have reason to believe cost me many times the amount I got for the fillings. Where the decay is extensive and the approximal edges are thin and ragged almost or quite to the cutting edge, the wedges may be dispensed with and the separation made and cavities opened by means of files and chisels. Thin edges are to be cut away and made smooth, decay removed, chiefly with

differently shaped excavators on the same principle as in other situations. A little undercutting is to be done whenever there is tooth substance enough to admit of it; generally a little of this can be done at least towards the cervical and cutting edge borders of the cavity. In a vast majority of cases, I think retaining pits are both unnecessary and undesirable. Everything else having been done, the preparation of the cavity is completed by smoothing the edges with rather fine emery strips. This is not to be considered unimportant, as it is impossible to put a smooth finish on the filling if the edges of the cavity have not previously been made smooth. Strictly speaking, perhaps, the preparation of the cavity should not be considered complete until its surfaces have been touched with creosote, carbolic acid, or oil of cloves This is theoretically important, and I usually practice it.

In conclusion, I will say there are many points to be considered in the preparation of cavities in the varied cases that are presented in practice, that can not be touched upon in a short paper like this, but there are a few points that are especially important, which may be recapitulated as follows: Procuring free access to the cavity; thorough removal of all decay, with the exceptions noted; the removal of all frail and ragged edges; beveling and polishing the edges of the cavity; so shaping the cavity that the filling, if properly introduced, will stay.

A general and lively discussion followed, participated in by Drs. M. Wells, of Indianapolis; F. M. Hamsher, of Delphi; F. C. Eddleman, of Greensburg; D. L. Overholtzer, of Logansport; C. H. Harrouen, of Ohio; W. B. Pike, of Illinois; S. M. Goode, of Indianapolis; S. C. Carter, of Liberty; J. B. Morrison, of Indianapolis; W. N. Wilson, of Richmond; J. E. Cravens, of Indianapolis, and others.

As it was almost six o'clock the Association adjourned until eight P. M.

EVENING SESSION—FIRST DAY.

Association called to order by the President at eight P. M.

A communication was received from Dr. Martin A. Bird, of Anderson, requesting that his name be dropped from the roll of the Association. A motion was made and carried that Dr. Bird's request be complied with.

On motion the second subject, Operative Dentistry, was passed, and that of *Regulation of Teeth*, with models and apparatus, by Dr. M. H. Chappell, of Knightstown, was made the special order for the evening. Dr. Chappell then proceeded to give an elaborate lecture, illustrating fully with numerous plaster models, apparatus and blackboard drawings. General discussion and questions of an interesting character followed, until a late adjournment.

SECOND DAY—MORNING SESSION.

According to the regular programme, this morning was to be devoted to Clinics.

Dr. W. W. Evans, of Washington, D. C., present by invitation, gave a demonstration of his manner of mounting sets of teeth with celluloid on gold plates. Dr. Evans used the S. S. W. new mode heater. The demonstrations were highly satisfactory, and showed the perfection of skill and high art attained by the distinguished visitor.

After the demonstrations were completed, considerable discussion followed, and many questions were answered by Dr. Evans touching celluloid and the new mode. Dr. Evans received a rising vote of thanks of the Association.

Adjourned for dinner.

AFTERNOON SESSION—SECOND DAY.

Association called to order soon after two P. M. President Kirk in the Chair.

The following resolution was adopted:

Resolved, That all dealers in or manufacturers of dental or other goods, or their representatives, be requested to refrain any mention of their wares on the floor of this Association.

The resolution was adopted.

Dr. A. C. Deputy, of Noblesville, presented a patient having a tumor in the mouth.

J. A. Comingor, M. D., of Indianapolis, Professor of Surgery in the Medical College of Indiana, being present, made a careful examination of the case presented, and pronounced it to be an epulous tumor of fibroid character, and promised to operate for the removal of the same before the Association at another hour.

The subject of Mechanical Dentistry was again taken up, under which Dr. W. E. Driscoll, of Bedford, read the following paper:

ARTICULATION OF ARTIFICIAL TEETH WITH A VIEW TO THEIR BETTER RETENTION IN POSITION.

BY W. E. DRISCOLL.

MR. PRESIDENT: In answer to the invitation of your Executive Committee, I bring before you a collection of models and practical sets of teeth illustrating a system of articulating artificial teeth, with a view to their better retention in position for speech and mastication. The plan is specially applicable to extreme cases of short and hard gums and flat and hard palates. Yet if the principles upon which the system is based are

violated in any considerable degree, the best shaped gums and palates will fail to retain teeth comfortably and efficiently in position. So far as a written description can elucidate the subject, I shall not be able to make it any plainer to your understanding than in my attempt in the same direction in a paper read before this Association two years ago, and published in the *Dental Register* of August, 1880. I had hoped that effort would place the matter before the profession in a light clear enough for an intelligent judgment of its merits. But finding that those of whom I had expected most in the application of the principles of this improvement had made the attempt in such a half-hearted manner as to defeat the object sought, I concluded that something more must be done or the plan would be considered faulty, owing to a failure to make the changes from old plans sufficiently marked. And I will say now if any one becomes sufficiently interested to attempt to adopt the plan I am going to describe, I hope he will do so in such a thorough and practical manner that it may justly be called a trial of my suggestions, and not a mixture of nearly every thing else. I confess to a desire to attract attention to this subject that will lead to a general investigation of it. I have not assumed to occupy your time upon something upon which my own mind is not made up, something of a few week's enthusiasm. On the contrary, I can not now recall any case wherein I failed or declined to attempt to fit a patient with teeth up to five years ago, and now undertake a case of the shortest gums with about the same confidence of success as I do with the most favorable cases. I now expect every one to use teeth excepting an extremely small proportion, who are disinclined to allow them to stay in their mouths without regard to their usefulness, and the greater portion of this class will, if given time, overcome their eccentricity and be the most thankful of any for the service rendered.

I have some professional friends present who selected their most hopeless cases, upon each of which several dentists had failed to construct dentures that the parties could use, and upon the first trial of this system the patients, with a few weeks trial

of the teeth, expressed themselves as satisfied. This much to secure your earnest attention to what follows. Stated in the fewest words, the improvement consists in securing backward pressure upon an upper set of teeth and forward pressure upon a lower set. No one will, I suppose, question the propriety of this as applied to an upper set. At first view, its application to a lower set seems more open to objection. Press the lower set forward and we utilize the only approach to a rim that can be left to many lower sets, that between the jaws under the molar teeth. Forward pressure makes this rim fit firmly to this part of the gum. A failure to do so is a matter of common complaint with those learning to wear artificial teeth. Such close fitting will produce soreness at first, but in time the parts will toughen the same as any other part of the gums.

How are we to secure the backward pressure upon upper sets and forward pressure on lower sets at the same time? It must be done by elevating the line of articulation at the front teeth as much as can be done with upper teeth having a very short bite, and depressing the posterior teeth as much as can be done with lower teeth extremely short, from the pins to the grinding surfaces of the molars. Teeth must be selected with this object in view, or the plan can not be carried to a successful issue.

Very often four bicuspids must be left off to shorten the sets so they will allow the necessary depression upon the posterior portion of the gums. When setting up the teeth, leave a space between the front teeth that will allow an ordinary thickness of blotting paper to pass between their cutting edges when the molars are firmly set on their grinding surfaces. After a few days or weeks wear the front teeth will be found striking together freely as hard as is desirable, if not so much so as to require some grinding to again throw the main pressure upon the back teeth. The outside and inside cusps of the molars, above and below, must be on an exact level—outside ones no higher than the lingual or palatal ones. When an extreme degree of absorption has taken place, the superior molars will extend near an inch from the upper gums. But let no one

hesitate to try them in that way, and the result will be a surprise. Where the inferior alveola is practically absent, care must be taken to set the six front teeth fully as far backward as where the ridge should be, and in extremely discouraging cases it will at times be best to set these six teeth a little inside of where the ridge has been. This will, in some cases, leave the upper front teeth standing much more prominent or outside of the line of the lower ones. If this can not be remedied by setting the upper teeth under the gum without interfering with the upward slant of the line of articulation, then the hiatus must be endured, and in many mouths it will be found to amount to no real objection upon trial.

In cases where the short appearance of the upper front teeth would be an objection, an off-set may be made between the molars and bicuspids of each set that will secure or produce the desired backward pressure upon the upper set without the upward slant extending so far forward. This off-set may also be used where there is not room between the ridges to get the amount of dip necessary to a practical result; or to get the upper front teeth to show as desired.

The upper slant of the line of articulation might terminate at the first bicuspids; but this will not be found necessary, as a rule, and in some cases would defeat the attempt to induce the patient to wear teeth at all.

Where a portion of the lower natural teeth are retained, all points of articulation that have a tendency to press the upper plate forward, must be avoided, and all available points to construct slanting surfaces that will result in backward pressure upon the plate must be used. Sometimes this can be done by setting a tooth on each side, so as to receive a glancing stroke from the lower teeth, or prominences of the material of which the plate is made may be so placed as to shut down behind a posterior lower tooth on each side. Sometimes several of the molars are very much elevated above a plane with the teeth anterior to them, and have a very decided tendency to press an upper set out of the mouth. Such teeth, when leaning forward, must not be allowed to strike the upper teeth with their gring-

ing surfaces; but to utilize them in keeping the plate in position, prominences of plate material must extend downward behind them, presenting an inclined plane for them to strike against, that will press the plate backward. The patient may object to these prominences, slanting strokes, etc., at first, but when he or she realizes their value there will be an end to objections.

Some critics may say this plan will require teeth to be made without regard to their natural appearance, or to the restoration of sunken features, etc. Not so, if rightly understood and practiced. Although the points of contact of the opposite sets of teeth may be too far inward to restore the expression, this may be counterbalanced by additional material in the rims. And with a full rim and teeth, set well inward, the lips may and do take hold upon these rims and aid to retain them in their place. Very often teeth, instead of being assisted in this way to retain their place upon the gums, are forced from their position by the action of the lips and cheeks.

An accurate bite is necessary when these slanting surfaces and prominences are used in articulating teeth. To secure this, I have an improvement upon the plan mentioned two years ago. When the wax is placed between the gums, direct the patient to swallow at the same moment that the jaws close toward each other. This plan is so satisfactory as to leave nothing to be desired further in that particular. If a hard substance is imbedded in the wax to arrest the closure of the jaws at the right distance from each other, the gum will generally be flattened at that point. So when the models are placed in the bite, the flattened points in the bite must be cut out that the models may go accurately to their proper positions.

In constructing teeth upon the cheap bases, I do not hesitate to say that all trying teeth in the mouth after grinding up and before being finished for use, is worse than useless. There can be no dependence in the way a patient will close the mouth with a loose lot of gutta percha therein. The length of the teeth, the fullness of the rims, and everything desirable to know can

be ascertained by means so much more simple and practical that I do not consider it worth while to go into a description of them.

Dr. J. W. Baxter, of Vevay, presented some novel impression cups, hastily improvised of common tin plate. The design of these cups is to accommodate in getting impressions of upper or lower cases, in which the bicuspids or first molars are absent, eaving spaces at the sides between the anterior and posterior teeth. The plan is very simple and good.

A lengthy discussion of Dr. Driscoll's paper was participated in by Drs. Merit Wells and W. M. Herriot, of Indianapolis; S. C. Carter, of Liberty; W. H. Gilbert, of Peru; W. W. Evans, of Washington, D. C.; C. H. Harrouen, of Ohio; J. K. Pattison, of Lafayette; K. B. Davis, of Illinois; G. W. Keely and J. Taft, of Ohio, and Jeremiah Robinson (Uncle Jerry), of Michigan.

An invitation was read from the State-house Commissioners to visit and inspect the process of construction. Invitation accepted. The Association went as a body to the State-house works at the close of this session.

The Board of Censors reported charges of violation of the code of ethics against Drs. E. H. Creditor, of Angola, and J. K. Jameson and W. S. Rawls, of Indianapolis. The charge was "unprofessional advertising."

The Secretary was instructed to notify the parties named and request their appearance before the Association to answer to the charges at 8 o'clock P. M., same day.

Association adjourned to 8 o'clock P. M.

EVENING SESSION—SECOND DAY.

Association called to order by the President, Dr. Kirk, at 8 o'clock P. M.

The house called for an assistant Secretary to take notes for the Publication Committee, and the chair appointed Dr. W. C. Jeffrey, of Franklin.

The charges of the violation of the code of ethics were taken up. The Secretary called the names of parties named in the charges, who responded in person. The charges were then read, and copies of advertisements in proof were also presented, and read by the Secretary.

Dr. E. H. Creditor's case was first considered. The defendant plead guilty as charged, and apologized to the Association.

As there appeared to be certain extenuating circumstances connected with Dr. Creditor's offense, the Association agreed that the charges against him should be dismissed upon condition that he (Dr. Creditor) should affix his signature to a suitable apology and promise of future conformation to the code of ethics. Said apology, etc., to be spread upon the records of the Association. Dr. Creditor complied, and the charges against him were accordingly dismissed.

Dr. J. K. Jameson was then asked to make his defense. He admitted that some of the advertisements read in evidence were published with his knowledge and consent. Some were written by parties whom he knew. Still other were written without his knowledge, but he recognized them *all* as advertisements of his business, and as such were paid for, or would be paid for, whenever the bills were sent in by the publishers.

Dr. W. S. Rawls was asked to make his defense, and replied that it made no difference what action the Association took in this matter. That they (Jameson & Rawls) had come

to Indianapolis to practice dentistry, and advertised their business as they pleased, and should continue to do so regardless of the code of ethics.

Dr. J. K. Jameson, as the senior member of the firm, was then asked if he endorsed the statement of Dr. Rawls, and as he made no response, but left the room, it was concluded that he endorsed the statement of his associate.

A motion to lay the charges against Drs. Jameson and Rawls upon the table was lost, only two voting in the affirmative.

A motion was made that Drs. J. K. Jameson and W. S. Rawls were found guilty as charged, and *that they be expelled* from the Indiana State Dental Association.

The roll was called for yeas and nays on the foregoing motion, resulting in (22) twenty-two yeas, and (2) two nays. This being a majority of over two-thirds, the President declared J. K. Jameson and W. S. Rawls expelled from this Association, and directed the Secretary to drop their names from the roll of membership.

At this juncture Dr. J. K. Jameson re-entered the room, and began some ill-tempered remarks, when a motion was carried to adjourn to 9:30 o'clock A. M. next day (Thursday).

MORNING SESSION—THIRD DAY.

Association was called to order by the First Vice President, Dr. J. E. Cravens, of Indianapolis.

Dr. H. A. Smith, President of the American Dental Association, being present, was introduced to the Association, and extended an invitation to all present to attend the meeting of the American Association at Cincinnati in August, 1882.

The subject of Operative Dentistry was again taken up. Dr. W. F. Morrill, of New Albany, read a volunteer paper of a semi-historical character, in which he ascribed the honor of origination of cylinder fillings of gold to Drs. Clark and James Taylor.

Dr. J. Taft, of Cincinnati, and Dr. J. Richardson, of Terre Haute, advanced additional information upon the history of cylinder filling, and corroborated the statements of the essayist as to the honor of origin resting equally upon Drs. Taylor and Clark.

Through courtesy of Dr. J. A. Comingor, the Medical College of Indiana invited this Association to witness a surgical clinic by Dr. Comingor, in the amphitheater of that college, at 1 o'clock P. M. The case to be operated upon was the one presented by Dr. A. C. Deputy, of Noblesville, at the afternoon session of the second day. The invitation was accepted.

Operative Dentistry was passed, and the third subject, *Pivot Teeth and Porcelain Sections*, was taken up.

No papers were presented under this head, but the subject was freely discussed.

Drs. H. A. Smith, of Cincinnati, and W. W. Evans, of Washington, D. C., described their respective methods of setting pivot teeth, and Dr. J. B. Morrison, of Indianapolis, detailed his manner of setting porcelain sections in cavities of decay. All participants used the blackboard freely, and distinguished themselves as chalk artists.

On motion the third subject was postponed, and the Association went into an election of officers for the ensuing year.

The officers elected are as follows:

President—J. E. Cravens, Indianapolis.

First Vice President—T. A. Goodwin, Warsaw.

Second Vice President—T. H. Martin, Lebanon.

Secretary—R. W. VanValzah, Terre Haute.

Treasurer—M. Wells, Indianapolis.

Trustees—P. G. C. Hunt, Indianapolis; S. T. Kirk, Kokomo; D. L. Overholtzer, Logansport.

The reception of the address of the retiring President (Dr. Kirk) was made a special order for 2 o'clock P. M.

The following were appointed a committee on dental ethics:

Drs. J. Richardson, Terre Haute; W. F. Morrill, New Albany; J. E. Cravens, Indianapolis.

After some business matters were disposed of, the Association adjourned to 2 o'clock P. M., meantime the members and visitors to assemble at 1 P. M. in the amphitheater of the Medical College of Indiana, to witness the surgical clinic. The epulous tumor was quickly and skillfully removed by the eminent surgeon, J. A. Comingor, M. D., and at the conclusion a vote of thanks was given the authorities of the Medical College, and to Dr. Comingor in particular, for courtesies.

AFTERNOON SESSION—THIRD DAY.

Association called to order by Dr. Kirk, the retiring President, who proceeded to read his valedictory as follows:

GENTLEMEN: Associations of men for mutual improvement in a chosen direction, or for a specific purpose, are of very ancient date, and always have been of special advantage to those participating when they all spoke the same language, and worked for the same end or purpose. The first association we have any account of undertook the greatest work that has ever been planned by mortals, and were succeeding so well in their undertaking that Deity looked down in disapproval, saw no way of restraining them but by confounding their language so that they might not

by mutual help complete their undertaking, saying they could not be restrained while working in harmony. Since which time, in all ages, whenever we have an account of men associating themselves together for a specific purpose, they have always been advantageous to themselves. But it has been left to us of the present century to fully appreciate and put them in practice. We have now associations representing almost all the professional and industrial interests of the world.

We would ask why these associations, and what are they for? One man thinking and toiling to accomplish a certain end, only has one mind to think, one brain to plan, and one set of nerves and muscles to help him in his work; therefore, he feels the necessity of help from others who are working in the same channel, and seeking their assistance, is willing in return to give what he has gained by his thought and labor; therefore, the object aimed at is brought nearer to accomplishment by the knowledge of each individual being placed in a common fund for the use of all.

The time was, in the memory of some who are present, when knowledge gained by members of our profession was kept as a secret by the fortunate discoverer, or told only to a chosen few. But the time came when a more liberal spirit prevailed. Men saw that the knowledge they possessed would be useful not only to their professional brethren who were groping in the dark, but to mankind in general. Seeing that the science of dentistry was a humane one, and that by disseminating the store of knowledge they possessed, they would thereby help the common cause of humanity by relieving suffering, and instead of destroying diseased natural organs, restoring them to health and usefulness, or replacing lost ones with the best that art could devise, organized themselves into associations and colleges for the dissemination of dental knowledge. Among the first was formed our own *Indiana State Dental Association*, and although she has had to contend with much opposition in the form of ignorance that would have destroyed her if possible, yet she still lives and has accomplished much in breaking down the barriers that have been placed in her way. She has always reached out her

arms after those, who, knowing that they were not all they should be, had aspirations to come higher.

When once within the fold they have been given the privilege of partaking of the common stock of the knowledge of all, until there are many practitioners of the State who can say, she is our foster mother; to her we owe largely for what we are.

Not satisfied with what was being done for those who came willingly within the fold, those who were interested in the wider diffusion of dental knowledge, both for the benefit of the profession and those seeking our services, they sought, and by years of persistent labor, obtained legal enactments, both for the purpose of elevating the legitimate profession, and protecting the public from those who, claiming to be dentists, are wholly incompetent.

The law we have, although not all that we would like, and not what we should have, has been and is of great benefit both to the profession and public; and if strictly enforced will be of far greater benefit in the future. Many young men who would have entered on a professional career, very poorly prepared, have been induced by its provisions to qualify themselves by attending college. Many such cases are known. How many others have been stimulated by it to greater proficiency, or wholly abandoned the intention of entering the profession, we can only guess, but undoubtedly the law has had a decidedly beneficial influence in this direction.

It is a duty incumbent on every member of this association to do all in his power to sustain the provisions of the law as it is, hoping in the near future it may be so amended that it will be all we desire.

When the law was passed prohibiting men from practice who were not prepared, those who had worked for it, seeing that it was unjust to require a standard of excellence that we were not prepared to impart, immediately set about to organize and prepare a place where the needed instruction could be given, and not enforce our young men away from home to get that which we should give them.

The result was the formation of the association that has founded *The Indiana Dental College*, and as it is composed wholly of members of this association, the work can be justly claimed as a result of our efforts, and should receive all the care and encouragement that we can individually and collectively give it. The college is now on a firm foundation, having funds sufficient so that its stock has been reduced, and that which remains unsold, withdrawn from the market. With a corps of instructors, capable, conscientious and untiring in their efforts to build it up, rooms ample to accommodate all, and well filled with the necessary apparatus for instruction, having had good classes in the past and a good prospect for the coming session, I think we of this association may feel justly proud of the achievement. While much has been accomplished, much remains yet to be done, and we should remember that while all knowledge is the result of individual effort, it benefits the world but little if kept in the breast of him who discovers it. Therefore, it is incumbent on each member of this association to throw in his mite to add to the general store of knowledge.

The best way to do this is, during the year, while we are engaged in our practical duties to be on the alert for items that might be of general interest, and store them up in our minds, or make a note of them in such a way that they can be used either in a paper to be read before the association, or in discussions of the subjects upon which they might bear. In this way our sessions might be much more profitable and interesting than they are. Many come to our annual feast only to partake of the good things, that they may be stronger for the coming year, forgetting to give any in return. This comes not from a selfish feeling, but with the thought that some one else can say that better than myself, or it may be that what you would say seems so small, forgetting that you may have more knowledge on the point under discussion than the person you are looking to, and that the sum of all human knowledge is made up of little things. There are gentlemen who come up here year after year taking but little or no active part in the proceedings, who could, if they would, impart knowledge that would be of value to us

all. As it is, what they might have given us, is carried away, making them none the richer, but the rest of us the poorer.

Now, gentlemen, in conclusion I would say, that whatever we have accomplished in the past should not satisfy us as to the future, but all of us should put our shoulders to the wheel, doing what we can, individually and collectively, to advance the common cause, working together in harmony, speaking the same language, and we will attain a higher and nobler position, and standing on the tower which we have built, looking back on past labors, feel proud of its results.

The retiring President's address was received with prolonged applause.

Dr. Kirk appointed Drs. W. L. Heiskell and S. M. Goode, of Indianapolis, to escort J. E. Cravens, President elect, to the chair.

Dr. Cravens thanked the Association for the honor and confidence bestowed, and at once assumed the duties of the office.

A vote of thanks was accorded the retiring officers for their services during the past year.

The following paper was read at 2 P. M., by Dr. J. Richardson, of Terre Haute:

CORRELATED DISEASES OF THE TEETH AND EAR.

BY JOSEPH RICHARDSON, M. D., D. D. S.

While there is, on the part of dentists, a general recognition of the existence of sympathetic nervous relations between the teeth, and other organs or regions more or less remote, it is to be feared that anything like a critical knowledge of the exact nature of this relationship is quite vague and limited. In so far, at least, as the subject under consideration is concerned, there is, it is to be apprehended, a pretty solid sub-stratum of truth in what Dr. Sexton, an eminent aural specialist of New York, has

to say of us, namely, that "the apathy which has always existed on the part of the medical profession regarding the teeth has left the treatment of these organs in the hands of men who have occupied themselves almost exclusively with its mechanical department, and who, as a rule, have but little to do with the teeth in a medical aspect," and then laments, "that a field of such interest has been abandoned by the profession."

While we may wince a little under this accusation, it may be as well to accept it as at least a partial statement of the truth if it will only serve as a stimulus to higher effort in the direction of an increased knowledge on our part of the "medical aspects" of our calling. That we have made some progress, however, in the direction indicated, would appear from the fact that, in a prize essay on this subject published in the *American Medical Journal*, 1880, Dr. Sexton had recourse to dental authorities for a large part of the pathological data in relation to the diseases of the teeth and gums, which it was necessary for him to employ in elucidation of his subject. Besides, dentistry as a science is quite young—less than half a century old, while otological science may be said to date from the time of Du Verney's treatise on the ear, nearly two hundred years ago. It took the medical profession about two centuries to emerge from darkness into light in respect to the true nature of the nervous relationship we are considering. The writer already quoted says:

"The otology of the fathers, indeed, did not include a knowledge of a nervous relationship; and even at the beginning of the present century the writings of Saunders, Saissy, and others allude to diseases of the teeth as affecting the ears, in a manner most meager, although anomalies of the throat were spoken of as causing deafness; principally, however, as offering a mechanical obstruction to the faucial openings of the Eustachian tubes. Even Toynbee, Wilde, Triquet, and their contemporaries, failed to contribute to the knowledge of this subject in any material manner. The important work of clearing up this subject was left to the otologists of the present day, and in turning to our principal writers we find the nervous relationship of the teeth and ears clearly recognized." The evolution of knowledge was slow on

this subject, but we accept the results with thanks, and should endeavor to turn them to some practical account in the practice of oral surgery.

Availing myself of the researches of some of these later writers on otological science, I shall confine myself to as brief a consideration as possible of the sympathetic relations of the teeth and gums and the ear, and incidentally of the brain. Even a superficial survey of this limited field of inquiry, for it might be extended as well to the eye and other organs or regions, must impress every one with its practical value to us as practitioners of oral surgery, and I therefore solicit your patient attention to what may be offered.

It is not so much of mere functional disorders of the ear manifesting themselves as reflex neuralgias, that I shall speak, but of structural lesions or trophic diseases affecting the several parts of the auditory apparatus. This aspect of the subject is one about which the greater interest centers considered in its relation to diseases of the teeth and gums as the primary source of such injuries through the operation of the law of reflex action. It will be curious and instructive to know how deaf-mutism and fatal convulsions in childhood, or partial or complete loss of the sense of hearing in adult life may be induced primarily by the eruption of the deciduous teeth in the one case, or decayed teeth in the other, for all these grave sequences are sometimes clearly traceable to the primary disorders of the oral cavity. The relation of a single typical case will serve as a text to point out the nature of the relationship between diseases of the teeth and trophic tissue changes of the ear.

Dr. Charles H. Burnett, of Philadelphia, author of a treatise on the ear, relates the following case. I shall omit much that relates to topical treatment of the affected organ.

"In July, 1878, Mrs. B. P., aged forty, consulted me in reference to a discharge from the right ear, which had annoyed her for some time. Her statement was, that the discharge had set in after an attack of not severe ear-ache some months previous; that the discharge then grew slowly less, when another attack of pain in the ear was followed by an increased discharge, again to

diminish and again to increase, after the now frequent attack of pain. The hearing had at no time been affected to any extent, being only slightly dulled sometimes, apparently by retention of small quantities of discharge. The latter had never been very great, and the chief annoyance seemed to be the recurrence of pain and the odor of decomposing matter in the ear. There had been some ear disease on this side after scarlatina in childhood, but the ear had healed, and remained a good one until quite recently, when the above symptoms showed themselves. The patient had no reason to assign for her aural disease.

"Upon inspection, the membrana tympani was found perforated in the inferior posterior quadrant, at which point there were some small granulations.

"The posterior wall of the auditory canal, near the membrana tympani, was ulcerated, showing a granulating spot, and the fundus of the canal was bathed with light-colored pus. The Eustachian tube was easily inflated by Valsalva's method, and the perforation whistle readily obtained. The mucous membrane of the tympanic cavity, seen through the perforation after the ear was cleansed, appeared healthy, thus showing that the disease was confined chiefly to the outer surface of the membrana tympani and the posterior wall of the canal; in fact it suggested itself to me that the disease might have originated in the canal and spread to the drumhead; but it did not occur to me, until after prolonged treatment, that the disease in the ear might be *purely reflex, and due to several* diseased teeth in the lower jaw on the right side, as it finally was shown to be."

The treatment of this case was continued for nearly four months before Dr. Burnett discovered the origin of the ear trouble. Partial relief was obtained at times, only to be followed by a recurrence of the unfavorable symptoms. At the patient's last visit Dr. Burnett says: "Though the objective symptoms were good, the patient said she had some of the old pain, which she had felt so often and knew so well as a forerunner of renewed ear discharge. A casual remark about her teeth, viz: that they had long given her discomfort, led me to look into her mouth; on the right side of the lower maxilla,

the *first and second molars were seen to be largely decayed and the gums about them inflamed and sensitive.* This at once furnished a clue to the origin and stubborness of the disease in the ear. As soon as these teeth were extracted, all discomfort in the mouth ceased, and from that *day to this, two years, no pain or any other symptom of aural disease has shown itself.*"

There is, I think, no mistaking the testimony of this case. The prompt subsidence of the aural trouble following the extraction of the teeth points clearly to the sympathetic and dependent character of the former. A study of the nervous relationship between the teeth and gums, and the external meatus, or auditory canal, the part most prominently effected in the related case, and the manner in which trophic lesion of the latter is established by reason of such relationship, will serve as a key to an understanding of the source and nature of similar morbid processes sometimes affecting other parts of the auditory apparatus, as the Eustachian tube, the middle ear or tympanic cavity, and the labyrinth.

Before tracing the continuity of nerve fiber between the teeth and ear, there are some ascertained facts relating to nerve function, a knowledge of which seems essential to an intelligent comprehension of the subject under treatment.

Dr. Edward Woakes, of London, one of the most careful and intelligent exponents of the doctrine of reflex diseases of the nervous system, after relating the case of an enlarged gland below the external ear, associated with disease of the external meatus, and cured by the extraction of a decayed tooth, says: "Now the question before us is to find the solution of the train of symptoms just detailed. We have the phenomena of pain, inflammation, and suppuration occurring in an organ widely separated from the recognized exciting cause, and in tissues histologically distinct from those manifesting the morbid changes. The only obvious connecting link between the regions interested is the continuity of nerve fibre. The simple continuity of sensori-motor nerves is insufficient to produce the conditions under review; we must seek yet farther for the true medium by which they are brought about. This will be found in the relations of

the vaso-motor nerves, and the functions which it is their office to fulfill.

"As it is this portion of the nervous system that is mainly concerned in the morbid processes we are examining, it will be necessary briefly to enumerate the chief points in its economy. By far the most important fact in connection with the vaso-motor system is that, with one or two exceptions, all sensori-motor nerves comprise fibres belonging to it, and that these fibres run in a contrary direction to the cerebro-spinal nerve with which they are associated. Thus in speaking of a cerebro-spinal nerve, say the vagus, we describe it as pursuing a course *from* the medulla to the respiratory organs, and the several viscera which it supplies. At the same time it must be remembered that it contains other fibrillæ in its sheath running *from* the viscera towards the nerve centre, some of which at intervals leave the sheath and enter a ganglion of the sympathetic, in their course to the general vaso-motor center, situated in the medulla oblongata, at a point which has scarcely been determined for the human subject, though it has been accurately fixed in the rabbit. These fibres then are centripetal or afferent in their function, conveying impressions from the tissues to the sub-centers constituted by the ganglion, or to the general vaso-motor center.

When these fibres enter a ganglion, they communicate with its caudate cells, which important fact brings them into communication with other nerves coming from different directions to the same ganglion. When the afferent fibres leave the ganglion, they pass backwards by one of the two cords, leaving the ganglion to join the spinal cord, and in it traverse the anterior columns of the cord in an upward direction to reach the primary vaso-motor center.

The *afferent* or *centrifugal* fibres in reflex relationship with the foregoing, or *afferent* fibres, follow an exactly similar course from the general center *downwards*, likewise along the anterior columns of the cord, which they leave opposite an inter-vertebral foramen to join a sympathetic ganglion, constituting its second root, and after similarly mingling with the caudate cells, quit it

to seek their several destinations on the coats of the arteries whose caliber they regulate. Further, it is to be noted that by the automatic action of the *general* vaso-motor center, the normal caliber or tone of the vessels is maintained."

In Foster's work on physiology we find the following physiological fact distinctly recognized: "The tone of any given vascular area may be altered, positively in the direction of augmentation (constriction) or negatively, in the way of inhibition (dilitation), quite independently of what is going on in other areas. The changes may be brought about by (1) stimuli applied to the spot itself, and acting either directly on the local mechanism, or indirectly by reflex action through the general vaso-motor center; (2) by stimuli applied to some other sentient surfaces, and acting by reflex action through the general vaso-motor center; (3) by stimuli (chemical, blood-stimuli) acting directly on the general vaso-motor center."

In the case under consideration, the change in the tone of the arteries distributed to the ear would be induced by the class of stimuli spoken of by Foster under the second head, or by stimuli applied to sentient surfaces (the teeth and gums).

The physiological action of the vaso-motor system upon the tonicity or caliber of the arteries is thus demonstrated by experimental tests. I quote from Foster's Physiology: "Nerve fibres belonging to the sympathetic system are distributed largely to the blood vessels, but their terminations have not as yet been clearly made out. (We may say, parenthetically, that by blood vessels is here meant the arteries chiefly, if not altogether. As it is the function of the vaso-motor system to regulate the caliber of the vessels to which they are distributed, and as this can only be done by their action on muscular tissue, their action is limited to arteries, since the coats of the capillaries are destitute of muscular fiber, and the veins have but very slight traces of it). By galvanic or mechanical stimulation, this muscular coat may in the living artery be made to contract. During this contraction, which has the slow character belonging to all plain muscle, the caliber of the vessel is diminished. During relaxation more blood flows into the artery. Division of

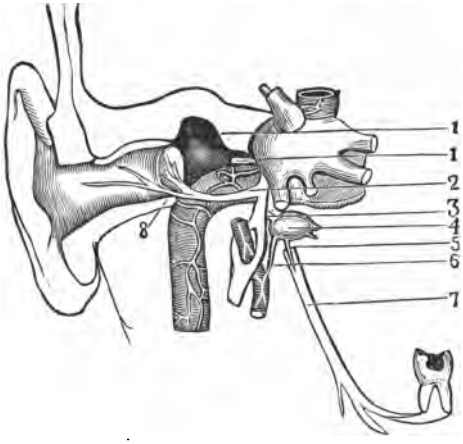
the cervical sympathetic of the rabbit affects the circulation on that side, the whole ear being redder than normal, its arteries being obviously dilated, its veins unusually full, innumerable minute vessels before invisible come into view, and the temperature may be more than one degree higher than on the other side. If the upper end of the cut nerve be now stimulated by the interrupted current, the ear again becomes pale; much paler than normal. If the current be strong, the vessels diminish in size, so that the smaller ones disappear and the temperature falls. When the current ceases, flushing again occurs."

These interesting experiments demonstrate very clearly, it will be observed, the controlling influence of the vaso-motor nerves upon the circulatory apparatus to which they are distributed, and, by consequence, the blood supply in any particular area.

Reverting now to the nervous relationship between the ear and the teeth, it will be found that, by means of the otic ganglion, a nervous connection is established in the following manner: "The nerves supplying the mucous membrane of the tympanic cavity, as well as that of the Eustachian tube and Mastoid cells, are derived from the tympanic plexus, an anastomasis between the *otic ganglion*, petrosal ganglion of the glossopharyngial nerve, and the carotid plexus, by means of the superior cervical ganglion of the sympathetic. Now, by means of the otic ganglion, the soft palate, the drum-head, and the tensor tympani muscle, the lining mucous membrane of the cavity of the drum, and the integument of the external ear, are put into sympathetic relation with each other and other parts of the nervous system,"* In studying this nervous connection, it is needful to bear in mind the important and essential part the otic ganglion plays as a *medium* of communication between the teeth and the ears. This ganglion is situated on the inner side of the sensory division of the inferior dental nerve, and com-

*Burnett.

municates with it by two or three small branches, and also with the tympanic plexus, of which it is a component. (See accompanying diagram.)



Applying the facts in connection with the continuity of nerve fibre between the teeth and the ear, and the functions of the vaso-motor system, it remains to explain the *modus operandi* by which irritation in a diseased tooth or the gums may give rise to trophic lesions of the ear.

For purposes of illustration, I will take the case related by Dr. Burnett, where perforation of the tympanum and ulceration of the external auditory canal existed, and which, after persistent topical treatment had failed, was speedily and permanently cured by extraction of the decayed molars on the same side.

It has been shown, in tracing the nervous connection between the teeth and the ear, that the region embracing the tympanic cavity, the drum-head, and external meatus, constituted an area correlated to the point of irritation in the diseased teeth by means of the otic ganglion. This ganglion is connected with the plexus of the sympathetic distributed to and over the external carotid artery, the branches of the latter supplying the external auditory canal with blood. It is easily

seen, therefore, how this part of the ear becomes an area correlated to the point of irritation in the diseased teeth, through the medium of the otic ganglion. Now, according to Dr. Burnett, as the effect of any irritation in a vaso-motor nerve-tract is to excite vascular dilitation within the area correlated to such point of irritation through diminished inhibitory nerve-power, we have following this impaired tonicity of the arteries, first, dilitation, then hyperemia or congestion, inflammation, pain, effusions, suppuration, and ulcerative destruction of tissue, as the case may be.

The same condition of altered blood supply may, from the same cause, occur in the drum-head, through the connection existing between the inferior dental nerve, the otic ganglion, and the internal carotid plexus of the sympathetic, in which case the blood supply of the tympanum through its branch of the internal carotid is augmented through a loss of inhibitory power in the vessel. In like manner, trophic disease of the middle ear, or tympanic cavity may ensue by reason of altered blood-supply induced by an irritation conveyed over a nervous area, the components of which are the tympanic nerve or plexus on one side, the otic ganglion as a medium, and the inferior dental nerve on the other side.

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This paper would be incomplete without some reference to the correlated diseases of the gums and the ear during the period of teething. From what has been already written, it will not be difficult to understand the sources of danger during this process. There is something startling and almost pathetic in the statistical revelation of the sufferings, disabilities, and mortality accompanying the eruption of the deciduous teeth. Out of 80 infants under fourteen months, examined by Dr. Wreden, of St. Petersburg, more than 80 per cent. had some form of ear affection. As these ear diseases were coincident with the period of teething, it is presumable that they were associated, in a large degree at least, with the latter process.

Respecting reflex diseases of the ear during infancy, Dr. Woakes justly and forcibly remarks: "The field of inquiry thus opened possesses interests far beyond those which appertain to

the ear as an organ of special sense. Even from this narrow point of view, the possible loss of hearing as the result of destructive processes in the ear occurring as complications of infantile ailments, the issue is one of great anxiety. For a child who thus becomes deaf before it has learned to talk will be dumb also, producing the pitiable object of an intelligent being deprived of two channels of communication with the outside world.

"As already intimated, it is on the very threshold of life that these sympathetic ear symptoms are brought into prominence. A child is cutting its teeth, and while the gums are yet swollen it suffers acutely from ear-ache. How do we know this, seeing the child can not speak? Any one accustomed to watch carefully the symptoms of these little patients will scarcely fail to discern in the troubled face, the resting of the head on the nurse, the thrill of agony which passes across its features accompanied with piteous cries or shrieks when its position is moved, especially if this be done suddenly, and more than all, the constant raising of the little hand to the side of the head; no one who has watched these symptoms will fail to connect them with the most agonizing of all the sufferings of early life—*ear-ache.*

"Now, the point I wish to emphasize is this: The pain thus experienced is not what we vaguely call neuralgia; it is a definite trophic change, an inflammation taking place in the deeper seated tissues of the ear, beginning with congestion and stretching of an acutely sensitive region, passing on to exudation and suppuration, and capable of being recognized, if the proper means are used for doing this. If the case be seen early, all these symptoms are at once removed by a free incision of the swollen gums. But it often happens that those trophic changes just alluded to have set in before the practitioner is called upon to see his patient. The gums are, however, duly lanced, and very properly so, because reflex irritation is thereby lessened. But, to the disappointment of practitioner and parents, the little patient is not cured. Then commences the orthodox role of treatment. Cold to the head, hot baths,

mustard plasters, and perhaps a calomel purge, followed by enemata. Still the patient gets worse, convulsions set in, and the child dies."

Thus, though the original irritation leading to these results may no longer exist by reason of the lancing of the gums, yet a veritable otorrhœa is established and perpetuated, menacing continually the life of the child by an extension of the inflammatory processes to the brain, an occurrence for which every facility is arranged by the intimate communications, which in the infant especially, exist for such an issue.

Aside from the dangers resulting in these cases from the pressure of effused muco-purulent fluid within the tympanic cavity, and the pain consequent thereon, which threaten the life of the child by the irritation excited in the cerebral centers, there is a particular structural arrangement which greatly favors the occurrence of fatal convulsions in the infant. At this early age the petrous and squamous portions of the temporal bone are developed separately, and between them exists a well-marked fissure. At this fissure the dura-mater dips down into the cavity of the tympanum or middle-ear, becoming continuous with its muco-periostial lining. This process of dura-mater carries with it a rich endowment of vessels derived from the middle meningeal artery, and which are the vessels belonging to the cavity. In the progress towards adult life this fissure becomes more or less obliterated, though the vascular connection with the arteries remains.

In the light of these facts it would seem useless to attempt to impress the gravity of the perils which environ the infant by reason of the reflex structural lesions so frequently occurring primarily from the irritation associated with teething. They carry their lesson with them, and point to timely and judicious treatment of the gums during this critical period.

On a review of the subject of this paper, which I am conscious has been imperfectly, and, I am sure, by no means exhaustively, treated, a question of peculiar interest to the dentist presents itself for consideration. If irritation having its source in the various structures of the mouth is competent

to produce trophic diseases of the ear in the manner related, may not irritation proceeding from morbid conditions of the ear give rise to trophic diseases of the several structures of the oral cavity. And if this be true, may not a better knowledge and a more general recognition of these reflex nervous relationships furnish the key to a solution of the origin of many affections of the buccal cavity the etiology of which is now unknown or obscure. I earnestly commend this aspect of the subject to the thoughtful and intelligent consideration of the profession.

——— Thompson, M. D., an eminent oculist and aurist, of Indianapolis, was present, and having been called upon by the Association, made interesting and instructive comments upon Dr. Richardson's paper. Dr. Thompson was listened to with marked attention, and afterward received the thanks of the Association for his presence and edifying remarks. Discussion of the paper continued. Drs. H. A. Smith and J. Taft, of Cincinnati; J. E. Cravens, of Indianapolis, and J. Robinson, of Jackson, Mich., citing cases in practice bearing on the subject of the paper. Dr. A. Berry (the boy dentist of Cincinnati,) also made some interesting observations.

Dr. J. Taft, editor of the *Dental Register*, asked permission of the Association to take a copy of Dr. Richardson's paper for publication in the next number of the *Register*. Permission granted. Subject passed.

The fourth subject on the programme was then called, but owing to the absence of the essayist the subject was passed.

A volunteer essay upon Pyorrhea-Alveolaris was offered by Dr. Will. H. Stephenson, of Wabash, Ind.

PYORRHŒA-ALVEOLARIS.

W. H. STEVENSON.

This disease seems to be very prevalent; at least it occurs very often in my practice. This frequency has led me to seek for the cause. I have entirely failed to get any satisfaction from text books or journals, and also have had no better success when seeking information from other dentists and physicians. About one year ago, a patient called on me to have his teeth cleansed. I found them in a very bad condition; at the slightest pressure blood and pus oozed from the gums and alveola. The teeth were so loose that it seemed as if they might have been extracted with the fingers. There was some tartar on the teeth, at the margin of the gums, which I removed, and polished the surface, I gave him an astringent wash to use, and requested him to return in one month, which he did. In again examining his gums I found very little change. The gums were a little firmer, the teeth were cleaner, but still loose, with pus and blood oozing from under the gums as before when pressed upon. I made inquiries about his habits of life, but failed to learn anything that gave me a clue. I did not, however, relax my efforts to solve the problem. In a few days I was called to his residence to extract some teeth for his mother. On examining her mouth before extracting, I found the mouth and gums in very much the same condition as that of the son. I extracted seven teeth (all she had) from the lower *alveola.* I then asked about the loss of the other teeth. She told me they had been taken out on account of scurvy; that they had been entirely sound, there not being a cavity in any of them. I was then requested to clean a sister's teeth, which I found in a similar condition. I also examined the mouths of two other sisters, and found the teeth and gums in the same condition. The father of the family was entirely without teeth. The more advanced in age the patients, the worse the condition of the case. I questioned all of them, but gained no information that would throw a ray of light upon the subject.

While at the house, dinner was announced, and thinking that possibly the dirt might have something to do with the condition of their teeth, I scanned the food closely. I found upon the table fat salt pork and ham, with mashed potatoes and other vegetables. Everything appeared to be gotten up in good shape, but upon taking the first mouthful, I found it was salted to saturation, and everything on the table that it was proper to season with salt was salted to the extreme. I inquired if they always used so much salt in their food as on that occasion, and found it was always the case. Indeed, they said they could not enjoy a meal without an abundance of salt.

The first-mentioned gentleman, upon arising from the table took a pinch of salt and went to the door and used it in cleaning his teeth, which he said he had been doing for years by the advice of a dentist.

Upon questioning those of my patients, who are affected in a similar way, I found that without exception they are addicted to the excessive use of salt. I am slightly troubled in the same way, and when I use more than the usual amount of salt food, I find it grows worse, but always improves upon a change of diet to a more exclusively vegetable diet, and less salt. The effects of an unusual or excessive use of salty food in my own case, are as follows: The gums become loose and flabby and painful to touch; the teeth become loose and sensitive, particularly as to cold air.

A few days ago a lady came to get an upper set of teeth. She had eight lower teeth remaining. Her gums and teeth were in the same condition as the cases before mentioned. I found upon inquiry that she not only used an excess of salt in her food, but also salt itself by the spoonfuls. In every case where I have found this condition of the teeth and gums, I have found upon inquiry that the patient was addicted to the excessive use of salt.

Now, let us see what are the disease-producing effects of salt, when used to excess, upon the human system: We find that "the teeth are sensitive to air and touch," "pain in the teeth," "decayed teeth feel loose, burn, sting and pulsate;"

"gums sensitive to warm and cold things;" "swollen, bleed easily, are putrid;" "epulis;" "fistula dentalis;" "great longing for salt;" "tooth-ache, with swelling of the cheeks;" "pain in the lower jaw, and submaxillary glands;" "throbbing tooth-ache;" "painful swelling of the gums, which bleed readily;" "scorbutic putrid inflammation of the gums;" "bleeding of the gums;" "ulcer on the gums, painful day and night;" "in the mouth and on the tongue, blisters and ulcers, with smarting, burning pain when touched by the food."

Now, here we have, in the pathogenetic effects of salt, a pretty accurate description of the disease in question, which might also be called scurvy. Salt also effects every organ in the body when used in excess, as may be seen by consulting any standard author who gives its pathogenesis. The principal antidotes are sweet spirits of nitre, which may be used by inhalation, and small doses of phosphorus, internally.

I wish to call the attention of the profession to this subject, that others may follow up the same line of investigation, so that finally the truth or falsity of the theory that an *excessive* use of salt is the cause of a larger portion of the cases of pyo-alveolaris may be ascertained.

The subject of this paper was remarked upon by Dr. M. Wells, of Indianapolis, and others.

Adjourned to 8 o'clock P. M.

EVENING SESSION—THIRD DAY.

Association called to order by the President, J. E. Cravens, of Indianapolis.

On motion, the fifth subject was passed.

The sixth subject—*Plastic Fillings*—was called.

A paper was read by Dr. W. N. Wilson, of Richmond, as follows:

PLASTIC FILLINGS—PERMANENT AND TEMPORARY.

BY W. N. WILSON.

By plastic fillings is meant all fillings in use except gold, tin and felt foil. I shall not go into a general discussion in regard to the relative merits of the two general classes. Each has its appropriate place. No material that combines all the properties of an ideal filling has been found. In the list of plastic materials used in filling teeth, amalgam stands first and alone as a permanent filling, and the scale descends as regards permanency with the different preparations of gutta-percha, hill-stopping, oxy-chloride and phosphate of zinc. The time has been when it would have been signing one's professional death-warrant to have admitted that one used amalgam; but passing resolutions did not stop the use, but perhaps served to give it a check for a time. The use of amalgam has been increasing for a number of years, and one of our prominent dentists says, "tons of amalgam are used annually for filling teeth."

To avoid misunderstanding, I will state in the beginning that I admit that gold is the best known material for filling teeth. What I will endeaver to bring out in this paper, is simply to present the filling materials assigned to me in the best light I can.

First, I would say a good amalgam filling is better than a poor gold one, and in the profession to-day some of us are unable to always put in a good gold filling in every cavity that is presented to us. In such cavities as these, I would advise the use of amalgam, for the reason that the cavities are easier to prepare. It is not absolutely necessary to keep the cavity dry when filling; it being plastic, is readily adapted to the walls of the cavity, and, while in the plastic condition, the surplus filling can be cut away without injury to the surrounding parts.

The cases may be few in which we would need to use amalgam, if our patients were always anxious to have their teeth filled with gold, or whatever was best; but all our patients are

not blessed with abundance of this world's goods, so they want their teeth filled with gold in front, and with amalgam, or tin-foil, in the back teeth. It has been supposed by some that any one could fill with amalgam, and that by its use skill was not necessary. By such teaching as this, discredit has been brought upon the profession, and suffering upon patients.

This will apply both to the eminent man who never uses anything but gold, and the charlatan who is ignorant of everything, except how to dupe the patient and get his fee; each assures his patient that he will have no further trouble with the teeth that have been filled.

The patients in time find they have been living in false security, and, when too late, find they only have aching roots; when, if they had only fallen into the hands of one whose professional knowledge was of such a character as to give ability to decide what operation should be performed, what filling material used, how to take care of the teeth, when to have them examined, they might still have had their teeth. Our patients should have enough confidence in us, whenever they put their teeth in our charge, to let us do with them whatever we think best, and we are false to ourselves and a disgrace to the profession if we do not care for them to the very best of our ability.

A lady presents herself at your office to have teeth filled; says she wants them filled with gold wherever they will show, but with amalgam, or whatever is best, where they will not. In those teeth in which we decide to use amalgam, we should use just as much care in preparing the cavity as we would in using gold; and I think one reason why amalgam is not more successful in saving teeth, is because of lack of care in preparing the cavities, the operator thinking it is only amalgam he is going to use, does not pay attention to all the minutiæ. In preparing a cavity, the same rule holds good in regard to removing the decay as in other metal fillings. I would not always prepare the margins or walls of the cavity the same. I would want the cervical wall flat or horizontal to the axis of the tooth, or beveled a very little toward the center. The dentine and enamel should be cut away until there is a per-

fectly sound wall. The margins of the cavity in every place should run in the direction of the enamel rods, which will enable one to make amalgam come up square against the wall, leaving no thin edge to break away.

There are cases in which operators can not follow the above implicity, but should approximate it as near as possible. I would not cut away as much of the enamel as if filling with gold, yet would not leave any weak, friable walls. In preparing a proximal crown cavity, where the greater part of the dentine is gone, but the enamel still standing, and good and strong, I would not consider it always best to remove it.

You will see by the figure what I mean: I mean if I had to remove the enamel from A to B, I would not stop there, but would remove it to C, for the reason that at B the amalgam can not protect the enamel, or the enamel the filling, and being at a point at which there is the greatest force brought to bear in mastication, both the amalgam and the enamel are chipped away, leaving an interspace, which will cause future trouble; but by removing it to C, I can protect the enamel by the filling. The arch A B C is much stronger naturally than I can make part of the arch, B C enamel, supported by B A amalgam. I want the cavity of a general retaining form without any sharp angles. If I had to make anchorage, would cut grooves.

I have used amalgam in a few cases in the following manner: The first case was right superior cuspid, the decay extending up under the gum so far I could not use the dam. I concluded to fill at the cervical wall with amalgam, which I did, letting the amalgam extend farther down towards the cutting edge on the palatal side of the tooth; the cavity was nearly half filled with amalgam. I finished it as I would any other amalgam filling, and filled the remainder of the cavity with hill-stopping. At the next appointment, I adjusted the rubber dam, removed the temporary filling, drilled retaining points in the amalgam. The cavity was of the very easiest character to fill, and in polishing the gold put a fine finish on the amalgam.

Case No. 2 was a first bicuspid—the mesial, distal and palatal wall gone. I shaped the cavity in the best manner I could to make it retain the filling, then placed a strong gold screw in the nerve cavity, then packed the amalgam around the screw and built up the walls of the tooth, not square, but slanting towards the remaining walls of enamel so as not to have any more pressure brought to bear on the filling than possible. At the next sitting I drilled retaining points into the amalgam and started the gold and carried it over the buccal wall to protect it. The tooth has been filled three years and is apparently as good as ever, and unless you were to examine it, would think it was filled with gold. Seven years ago I filled the approximal and crown surfaces of the first and second bicuspids for one of my patients with gold. Within three years I found those teeth decayed on the cervical palatal wall, one of them almost to the pulp; the other margins of the filling were perfect. I removed the decayed portions and filled with amalgam. I have examined those teeth repeatedly and they are still in a good state of preservation. In crown cavities, where your judgment would lead you to believe that within a few years there will be a decay on the approximal surfaces, which will make it necessary to remove the crown filling, use amalgam until that time. In cavities which are inaccessible and in frail teeth, condemned as worthless, as far as being filled with gold is concerned, use amalgam. Remember that compatibility of brains and finger ends has more to do with the permanency of the operation than the filling materials used.

In children's teeth, until they are properly calcified and in cavities decayed by nitric acid, I think it is to the best interest of both patient and operator to fill the teeth with some of the temporary fillings. I like gutta-percha the best in cavities where it will have to resist the forces of mastication, and hill-stopping in approximal cavities. Very often I use hill-stopping at the cervical wall and fill the rest of the cavity with phosphate of zinc. In shallow cavities and in large cavities where the dentine is gone, but enamel is good and strong, and I wished to protect the pulp from changes of temperature, I would use phos-

phate of zinc. To give the reasons why, when, and how to use the different temporary fillings, is more than I can attempt in this paper in the short time allotted me.

Dr. J. Robinson, of Michigan, was called upon, and responded, discussing the subject in an animated and intelligent manner.

Unfortunately, Dr. Robinson lapsed finally into an advertisement of a peculiar fibro-plastic of his own manufacture and sale. About the time Dr. Robinson had taken an upper set of teeth trom his own mouth, and began flourishing them before the Association, showing the lining of the plate with his own merchandise, a member arose to a point of order.

As Dr. Robinson was violating a resolution passed by the Association the previous day, with reference to dealers or manufacturers advertising their wares before the Association, the point of order was sustained, and Dr. Robinson took his seat, remarking that he "expected it."

Drs. Davis, of Springfield, Ill.; J. Richardson, of Terre Haute, and G. W. Keely, of Ohio, spoke upon this subject.

The sixth subject was formally passed.

By permission the State Board of Examiners made their annual report, of which the following is a synopsis:

Examinations during the year, five.

Five certificates had been issued to parties entitled to practice under the law without examination. The dental law was well observed.

A tabulated statement of receipts and disbursements showed the finances of the Board to be in good condition.

The Board announced that hereafter all examinations of applicants for permits to practice, will be conducted outside of the session hours of the Association.

The terms of J. Richardson, of Terre Haute, and S. T. Kirk, of Kokomo, having expired as members of the Board, requested that an election be held to fill said vacancies.

The Board declared that they had labored to maintain the proper standard of dental education and the dignity of the State Association.

The report was received, approved and ordered spread upon the records of the Association.

Drs. J. Richardson and S. T. Kirk were unanimously elected their own successors as members of the State Board of Examiners for two years.

The Board requested that a Legislative Committee of three be appointed to co-operate with the Board in guarding the dental law. The Chair appointed as such committee Drs. T. S. Hacker, of Indianapolis; R. Van Valzah, of Terre Haute, and E. J. Church, of Laporte.

The seventh subject was called, but as the essayist announced in programme was not present, and no paper was offered, the subject was passed.

The eighth subject—*The Indiana State Dental Association*—was called. In response, Dr. S. M. Goode, of Indianapolis, read the following paper:

THE INDIANA STATE DENTAL ASSOCIATION.

BY S. M. GOODE.

The question which arose, but was not settled, at the opening of this session, as to the correctness of the records regarding the age of the Association, suggested the propriety of a brief sketch of its organization, and also some thoughts as to its influence, accomplished and prospective. A preliminary meeting, with a view to the organization of such a society, was held in this city

September 18, 1858, and the organization was completed in December of the same year—the twenty-fourth year back; the second meeting being in January, 1860.

Dr. John F. Johnson, of this city, was chairman of the preliminary meeting.

The first motion made at the time of permanent organization was by Dr. G. H. Perine, of New York, for the appointment of a committee to arrange the order of business. That first committee was composed of Drs. P. G. C. Hunt, G. Lupton and A. M. Moore.

First list of subjects:

1. Best means of preserving the teeth.
2. Treatment of exposed nerves.
3. The best means to correct irregularity of teeth.
4. Mechanical dentistry.
5. Filling teeth.
6. Miscellaneous.

Subjects that are still deemed worthy of consideration.

Discussion of the first subject was opened by Dr. Hunt. Drs. G. H. Perine, of New York City; J. L. Broffett, of Paris, Ohio; and John T. Toland, of Cincinnati, were present, and were elected honorary members.

At a banquet given by Dr. Johnson, Dr. Parvin, in response to the sentiment: "The medical and dental professions," spoke of the relationship of the professions, and the necessity of the same for the general good of mankind.

"The medical profession—may it always be 'Wright.'"

Response by Dr. Wright:

"The dentist, a scarecrow, made use of by indulgent mammas to frighten unruly children."

A marked difference of appreciation suggested by these responses.

The constitution was drafted by a committee consisting of Drs. G. C. North and P. G. C. Hunt, of Indianapolis; R. H. Hurd, of Attica; S. B. Smith, of Terre Haute; G. Lupton, of Shelbyville.

First corps of officers: President, J. F. Johnson; Vice-Presidents, J. P. Ulery, Rising Sun, P. G. C. Hunt, Indianapolis, A. M. Moore, Lafayette; Secretary, recording and corresponding, G. C. North, Indianapolis; Treasurer, T. M. Nichols, Indianapolis.

Of these pioneers in this good work, our esteemed co-worker, Dr. Hunt, with whom time has dealt kindly, alone remains among us. Dr. Johnson, after years of successful practice, retired for the prosecution of other business. Some are in other fields, and others have gone, we trust, to where there is no suffering to relieve.

Much good has been done by this Association, and much more might have been accomplished had not so many kept themselves without its influence, and had those who have taken part, done so with more energy. Too few have made the continued, earnest effort essential to the greatest possibilities of the situation; but to some too great credit hardly can be given. Any sketch of the past of the Association, however brief, would be imperfect indeed, and untrue to its history, wherein favorable mention was omitted of three highly esteemed members of our profession from the neighboring State of Ohio, for their contributions to the interest and profit of our meetings; for whose coming we always look, and are seldom disappointed: Drs. Taft, Keely and Smith. Many good men from that and other States have contributed much to the cause, and we are glad and thankful that we have been so highly favored at this session, and say most cordially, come again, come always, and stay, if you can, to the close. It seems lonesome after you have gone.

The standard of dental education and skill is higher throughout the State than it would have been without this Association. But for it we would have no law to protect against future incompetents, and the Indiana Dental College would have no existence. It is impossible to estimate the good it will do in the future, if its avowed objects, "The elevation of the profession in the State, the promotion of harmony and concert of action and free interchange of sentiments between the legitimate thereof, and

to draw a line of distinction between the worthy and the unworthy," be kept in view, and efficient means used to secure them. Careful discrimination in reception of members, according to the constitutional provisions, and a faithful observance of the code of ethics, is important. There is, too, an unwritten code, binding upon and essential to the character of a gentleman, which should be faithfully observed within and without the Association.

All should give careful study to the topics appointed for discussion, and come prepared to take part intelligently, and listen understandingly. An especial responsibility rests upon those assigned or who volunteer to open discussions, and they should always be on hand, ready to lead off promptly at the proper time; otherwise, time is lost, and interest flags. A good, practical leading paper generally secures a profitable discussion, and must always do so, if all have properly considered the subjects.

The most intelligent and skillful are not always good talkers, but they can ask close questions, and often make a good speech by a single pertinent inquiry. Others, rich in knowledge and experience, and able to communicate, are restrained by a modesty which makes them feel that what they know would not be new to others.

The announcement in the circular letter sent out by the Executive Committee for this session, that "this must be the best meeting we ever had, or it will be the last one," left the recipients in a state of questioning uncertainty as to what class of emotions, or what word was appropriate to the occasion. Now, however, it shines out as a brilliant piece of strategy, and the committee is entitled to thanks for admirable management and congratulation upon complete success in the undertaking, to make it "the best meeting we ever had."

Dr. Goode's paper elicited hearty applause and approbation.

The Chair appointed as delegates to the American Association, meeting in Cincinnati in August, 1882, the following members:

S. M. Goode.....Indianapolis.
J. B. Morrison.....Indianapolis.
T. S. Hacker.....Indianapolis.
P. G. C. Hunt.....Indianapolis.
J. E. Cravens.....Indianapolis.
W. L. Heiskell.....Indianapolis.
G. A. Wells.....Indianapolis.
W. F. Morrill.....New Albany.
J. K. Pattison.....Lafayette.
W. C. Stanley.....Dublin.
S. B. Brown.....Fort Wayne.
M. H. Chappell.....Knightstown.
G. F. Nevins.....South Bend.
J. Richardson.....Terre Haute.
J. R. Clayton.....Shelbyville.
J. W. Jay.....Richmond.

After settling up the business affairs to properly close the year, the Association adjourned to the last Tuesday in June, 1883.

OFFICERS AND COMMITTEES

OF THE

INDIANA STATE DENTAL ASSOCIATION

FOR 1882-83.

OFFICERS.

J. E. CRAVENS, President, - - - - - - - Indianapolis.
T. A. GOODWIN, First Vice President, - - - Warsaw.
T. H. MARTIN, Second Vice President, - - - Lebanon.
MERIT WELLS, Treasurer, - - - - - - - Indianapolis.
R. W. VAN VALZAH, Secretary, - - - - - Terre Haute.

EXECUTIVE COMMITTEE.

W. L. HEISKELL, Chairman, - - - - - - - Indianapolis.
F. M. HAMSHER, - - - - - - - - - - Delphi.
S. T. KIRK, - - - - - - - - - - - - Kokomo.

TRUSTEES.

P. G. C. HUNT, Chairman, - - - - - - - Indianapolis,
S. T. KIRK, - - - - - - - - - - - Kokomo.
D. L. OVERHOLTZER, - - - - - - - - - Logansport.

STATE BOARD OF EXAMINERS.

P. G. C. HUNT, President, - - - - - - - Indianapolis.
M. H. CHAPPELL, - - - - - - - - - Knightstown.
S. T. KIRK, - - - - - - - - - - - Kokomo.
S. B. BROWN, - - - - - - - - - - Fort Wayne.
I. RICHARDSON, - - - - - - - - - - Terre Haute.

LIST OF ACTIVE MEMBERS

OF THE

Indiana State Dental Association.

NAMES.	RESIDENCES.
Andrews, W. L.	Kendallville.
Alleson, W. T.	Bloomington.
Anderson, E. H.	Indianapolis.
Burgess, C. C.	Indianapolis.
Ball, J. M.	Centerville.
Burt, E. V.	Lafayette.
Brown, J. D.	Fort Wayne.
Bartholomew, L. H	Terre Haute.
Brown, S. B.	Fort Wayne.
Burns, C. C.	Greensburg.
Baxter, J. W.	Vevay.
Bird, M. A.	Anderson.
Baxter, W. E.	Vevay.
Baxter, J. W., Jr.	Vevay.
Burket, F. M.	Plymouth.
Beebee, E. K.	Lafayette.
Creditor, E. H.	Angola.
Covert, O. S.	Bluffton.
Church, E. J.	Laporte.
Cast, G. W.	Thorntown.
Chappell, M. H	Knightstown.
Canine, C. E.	Hope.
Carter, S. C	Liberty.
Clayton, John R	Shelbyville.
Cravens, J. E.	Indianapolis.
Dills, C. E.	New Castle.
Driscoll, W. E.	Bedford.
Dun, C. E.	Plymouth.
Deputy, A. C.	Noblesville.
Eggleston, W. H.	Warsaw.
Elson, R	Auburn.
Ellis, J. W.	New Castle.
Eaton, B. B.	Indianapolis.
French, L. W.	Greensburg.
Folton, E	Crawfordsville.
Goode, S. M.	Indianapolis.
Glenn, Wm	Muncie.
Glenn, John	Decatur.
Goodwin, T. A.	Warsaw.
Grove, J. M.	Tipton.
Gray, C. F.	Fountain City.
Green, G. T.	New Albany.
Garner, J. W.	Muncie.
Gilbert, W. H	Peru.
Hunt, P. G. C.	Indianapolis.
Hood, John	Greensburg.
Hurd, H. R.	Attica.
Harlan, J. B.	Danville.
Heiskell, W. L.	Indianapolis.
Harlan, C. E.	Danville.
Hancock, B. F	Indianapolis.
Howland, J. C.	Indianapolis.
Hollingsworth, J. M.	Indianapolis.
Harriman, S. E	Lawrenceburg.
Hampsher, F. M.	Delphi.
Hacker, Thos. S.	Indianapolis.
Herriott, W. M.	Indianapolis.
Hartman, S. B.	Fort Wayne.
Hindman, W. M.	Vincennes.
Hall, W. H.	Terre Haute.
Hamilton, R. A.	Greenfield.
Harris, I. N.	Rushville.
Hutchinson, F.	Evansville.
Johnson, J. F., (out of practice)	Indianapolis.
Jay, J. W.	Knightstown.
Johnson, G. E.	Albion.
Jamison, J. K.	Indianapolis.
Knapp, Isaac	Fort Wayne.
Kirk, S. F.	Kokomo.
Keeley, J. W., (out of practice)	Indianapolis.
Knapp, Alvin	Fort Wayne.

NAMES	RESIDENCES.
Lupton, George	Shelbyville.
LeFever, H. H	Union City.
Loag, G. W	Fort Wayne.
Lanning, A	Salem.
Moore, A. M	Lafayette.
Morris, E. W	Waynesburg.
Manlove, M. N	Logansport.
Manlove, H. T	Logansport.
Mooney, P. W	Greensburg.
Morrison, E. M	Noblesville.
Morrill, W. F	New Albany.
Martin, T. H	Lebanon.
Morrison, H. H	Greencastle.
Mothershead, F. M	Columbus.
Manor, Chas	Muncie.
Martin, W. A	Goshen.
Mason, L. J	Fort Wayne.
Macumber, W. N	Anderson.
Morrison, J. B	Indianapolis.
McDonald, B. P	Goshen.
McClain, J. S	Hartford City.
Munhall, L. W	Indianapolis.
Nichols, T. M	Indianapolis.
North, G. C	Indianapolis.
Nevins, G. F	South Bend.
Nicholson, J. W	Franklin.
Nicholson, Wm	Martinsville.
Overholtzer, D. L	Wabash.
Olney, F. E	Marion.
Pifer, W. H	Lafayette.
Pattison, J. K	Lafayette.
Phillips, D. W	Petersburg.
Porter, John	Acton.
Pameson, J. T. S	Shelbyville.
Pomphrey, Lot H	Princeton.
Pursell, A. E	Indianapolis.
Richardson, Joseph	Terre Haute.
Robertson, J. D	Dublin.

NAMES.	RESIDENCES.
Regennas, E. G	Hope.
Rice, J. S	Shelbyville.
Reid, B. C	Anderson.
Rawles, W. S	Indianapolis.
Smith, S. B	Terre Haute.
Satterthwaite, H	Franklin.
Stanley, W. C	Dublin.
Sherwin, H. E	Rochester.
Smith, W. S	Lagrange.
Stephenson, W. H	Wabash.
Sites, H. C	Fort Wayne.
Smith, Ellerwood	Mt. Vernon.
Swigert, W. E	Spencer.
Steadman, J. J	Laporte.
Stevens, A. L	Anderson.
Sessions, Norman	Albion.
Shaw, J. M	Givensville.
Swallow, G. E	Indianapolis.
Stanley, W. C	Dublin.
Snider, E	Fort Wayne.
Turner, J. T	New London.
Trueblood, A. W	Paoli.
Thomas, N. C	Salem,
Teel, J. M	Kendallville
Talbert, C. S	Indianapolis,
Ulery, J. P	Rising Sun.
Van Valzah, R	Terre Haute.
Van Valzah, R. W	Terre Haute.
Webster, W. R	Richmond.
Wells, Merit	Indianapolis.
Webster, W. P	Richmond.
Watson, C. D	Covington.
Welch, W. H. H	Worthington.
Wilson, W. N	Richmond,
Waugh, J. E	Fort Wayne.
Weld, D. M	Terre Haute.

LIST OF HONORARY MEMBERS

OF THE

INDIANA STATE DENTAL ASSOCIATION.

NAMES.	RESIDENCES.
Atkinson, William H	Cleveland, O.
Braffert, ——	New Paris, O.
Britton, O. F.	Champaign City, Ill.
Black, D. B.	Jacksonville, Ill.
Carpenter, E. R.	Chicago, Ill.
Dunn, Dr.	Ohio.
Dunn, Chas.	Louisville, Ky.
Davis, Dr.	Springfield, Ill.
Emminger, Dr.	Columbus, O.
Foland, J. T.	Cincinnati, O.
Forbes, Dr.	St. Louis, Mo.
Goddard, Dr.	Louisville, Ky.
Grant, J. W.	Louisville, Ky.
Judd, Prof. Homer	St. Louis, Mo.
Keeley, G. W.	Oxford, O.
McKellops, Dr.	St. Louis, Mo.
Maxwell, A. W.	Cincinnati, O.
McBeathy, J. B.	Louisville, Ky.
Perrin, G. H.	New York, N. Y.
Pierce, Dr.	Philadelphia, Pa.
Redman, W. G.	Louisville, Ky.
Rodgers, M. W.	Louisville, Ky.
Reid, H. M.	St. Paul, Minn.
Scott, Dr.	Defiance, O.
Smith, H. A.	Cincinnati, O.
Scott, I. L.	Ohio.
Seeley, S. C.	Plymouth, O
Sihler, C.	Cleveland, O.
Taft, Will	Ohio.
Taylor, J. I.	Cincinnati, O.
Watt, Geo.	Xenia, O.
Williams, N. W.	Geneva, Switzerl'd.

STATEMENT OF

STATE BOARD OF EXAMINERS.

In accordance with an act to regulate the practice of dentistry in the State of Indiana, on the 25th day of June, 1879, the following named gentlemen were elected members of the Board of Examiners by the Indiana State Dental Association for two years:

P. G. C. Hunt.....Indianapolis.
Seneca B. Brown.....Fort Wayne.
Milton H. Chappell.....Knightstown.

Those elected for one year:

S. T. Kirk.....Kokomo.
J. R. Clayton.....Shelbyville.

In the organization of the Board, P. G. C. Hunt was elected President, and Milton H. Chappell Secretary and Treasurer.

On June 29, 1880, S. T. Kirk was re-elected for two years, and Joseph Richardson, of Terre Haute, was elected for two years in place of J. R. Clayton.

On June 30, 1881, the following named gentlemen were re-elected members of the Board for two years: P. G. C. Hunt,

Seneca Brown and Milton H. Chappell. The officers were re-elected: P. G. C. Hunt, President; Milton H. Chappell, Secretary and Treasurer.

On June 29, 1882, S. T. Kirk and Joseph Richardson were re-elected members of the Board for two years.

The Board, after a thorough and satisfactory examination under section 3 of the law, have issued certificates to

Joseph J. Pretlow.....Farmland.
Gustine McCullough.....Fort Wayne.
David E. Dalzell.....Logansport.
Edward P. Holloway.....South Bend.
Howell D. Newton.....Valparaiso.
William P. Jones.....Anderson.

Those examined on practical dentistry, operative and mechanical, under section 3:

H. H. Morrison.....Greencastle.
W. C. Howells.....Richmond.

In accordance with the following resolution of the State Association, adopted June 26, 1879:

WHEREAS, Difficulties may arise affecting the rights of dentists who were in regular practice at the time prescribed by law, by changing locations, and

WHEREAS, In the course of time disputes as to the right of the dentist to practice, having been engaged "in the practice of dentistry in this State at the time of the passage of this act," and

WHEREAS, It is necessary "to provide a fund to carry out and enforce the provisions of this act;" therefore be it

Resolved, That the Board of Examiners be, and they are hereby authorized to design and procure a suitable number of

certificates on paper, similar to diplomas, and any regular practicing dentist who comes within the provisions of said law shall be entitled to and receive one duly signed by said Board, and sealed by this Association's seal, on proper application, and on the payment of one dollar for the same.

Said certificates are now ready, and will be issued on due application. They are twelve by fourteen inches in size, very handsome and desirable. The Board, in accordance with request, have had a number printed on parchment, and will be supplied at three dollars each; those on heavy paper are one dollar.

The following named persons were engaged in the practice of dentistry within the State, and under a provision of the first section of the law, were entitled to practice:

NAMES.	POST OFFICE.
Allen, H. H	Thorntown.
Allen, Frank E	Thorntown.
Andrews, G. F	Kokomo.
Brown, Seneca B	Ft. Wayne.
Brigham, Elden T	Morocco.
Brown, Dan. M	Dublin.
Breneman, Wm. S	Goshen.
Broadbeck, H. W	Lawrenceburgh.
Burton, J. T	Edinburgh.
Baldwin, E. S	Covington.
Bailey, J. S	Vernon.
Berlin, A. R	Argos.
Beason, J. H	Pendleton.
Bertenwerffer, O. A	Evansville.
Billings, C. E	North Vernon.
Basham, H. N	Alton.

NAMES.	POST OFFICE.
Budd, S. O	Muncie.
Cope, J. P	Vernon.
Cave, J. C	Patriet.
Covert, Oliver S	Bluffton.
Crigler, Julius W	Morocco.
Crigler, W. H	Covington.
Camp, J. T	Rockport.
Creditor, Edward H	Angola.
Cummins, David E	South Bend.
Crumrine, W. K. M	Sweetzer.
Dales, George R	Washington.
DeVilbus, Alton L	Decatur.
Driscoll, Willis E	Bedford.
Elson, Richard	Auburn.
Eastman, G. E	Crown Point.
Fletcher, M. H	Richmond.
Funkhouser, Z. T	Mauchport.
Fry, Annie C	Greencastle.
Fry, Almanzo C	Greencastle.
Fosdick, William	Michigan City.
Goodwin, T. A	Warsaw.
Gant, A	Ligonier.
Harryman, S. E	Lawrenceburgh.
Huddleson, H. P	Winchester.
Hathaway, Mills	Peru.
Harris, I. N	Rushville.
Hargan, Henry C	Newburgh.
Hays, Webb	Rushville.
Hargrave, Charles B	Booneville.
Igoe, E. A	Lawrenceburg.
Irwin, James D	Corydon.

NAMES.	POST OFFICE.
Jordan, A. T.	Angola.
Johnson, George E.	Albion.
Jameson, J. K.	Indianapolis.
Kirkendall, Frederick	Rochester.
Kennedy, James G.	Indianapolis.
Kline, Homer J.	Logansport.
Kirk, Samuel T.	Kokomo.
Keltner, Frank M.	Anderson.
Lanning, Azariah	Salem.
Lincoln, C. O.	Terre Haute.
Lefever, Harry L.	Union City.
Lombard, H. N.	Michigan City.
Lamar, Thomas J.	Booneville.
Lanius, W. B.	Greenfield.
Morgan, J. Rollin	Bedford.
Moyer, W. H.	Kendallville.
Manis, L. M.	Seymour.
Martin, George W.	Bruceville.
Morris, Austin J.	Indianapolis.
McGowan, C. M.	Waveland.
McKinney, James W.	Booneville.
Mayhew, J. Marion	Cambridge City.
Morrison, Joshua H.	Connersville.
Nicholson, William	Martinsville.
Nutt, John E.	Bridgeton.
Robison, T. B	Winchester.
Shepherd, Wm. J.	Pennville.
Sundt, Albert	Rockport.
Sherman, Horace E.	Rochester.
Smith, Elwood	Mt. Vernon.
Shafer, G. O.	Fowler.

NAMES.	POST OFFICE.
Sites, H. C	Ft. Wayne.
Southwick, Hamilton B	Westville.
Thomas, O. H	Pendleton.
Teal, J. M	Kendallville.
Ulery, J. P	Rising Sun.
Wilde, Otto Eugene	Terre Haute.
Walls, W. T	Madison.
Walls, Mrs. Julia A	Madison.
Wilde, Herman	Evansville.
Way, Samuel C	Mt. Etna.
Webster, W. R., (deceased)	Richmond.
Wilson, W. N	Richmond.
Wilson, Charles S	Cambridge.

Persons wishing to secure certificates that they were engaged in the regular practice of dentistry prior to May 29, 1879, and within the provisions of the first section of the law, and that fact not being personally known by the Board, an affidavit will be required, stating the facts, as required by law.

The Board will meet for examinations one day prior to the first day of the sessions of the State Association.

The Board will not hereafter hold any meetings during the sessions of the State Association, but will hold their annual meetings during the interim of the sessions of the Society.

M. H. CHAPPELL,
Secretary.

STATEMENT

AS TO THE

INDIANA DENTAL COLLEGE.

One of the good results of the enactment of the dental law in Indiana was a wonderful stimulus to a proper professional education. A number of conferences were held by dentists of the State, and the conclusion attained was that a College of Dentistry was needed in the city of Indianapolis. The subject was referred to those in attendance upon the State Dental Association in June, 1879. Active support of the measure was guaranteed, stock was subscribed with a sufficient liberality to assure the establishment of a dental school. The vigor of support accorded the scheme is proved by the fact that although the proposition and stock subscriptions were made in June, '79, the Indiana Dental College began its first course in October of that year, in Thorpe Block on East Market street.

There were six students in attendance the first session, three of whom graduated.

The second session had twenty-one students, ten of whom graduated.

The third session had twenty-eight students, of whom fifteen graduated.

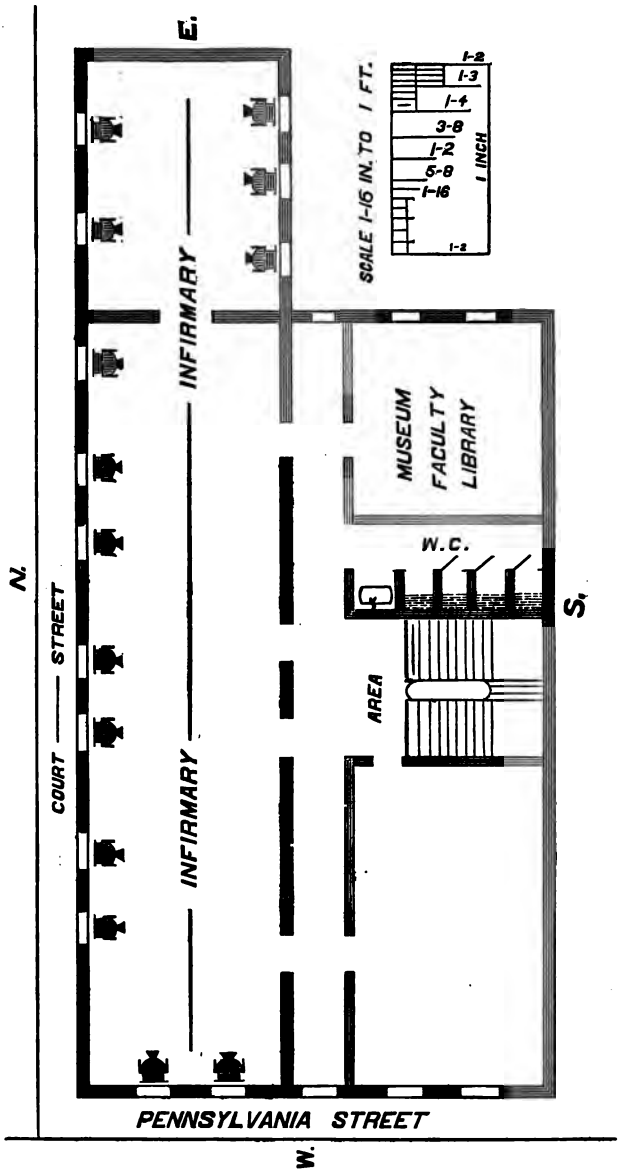
The fourth session (now in progress) began with thirty-five students.

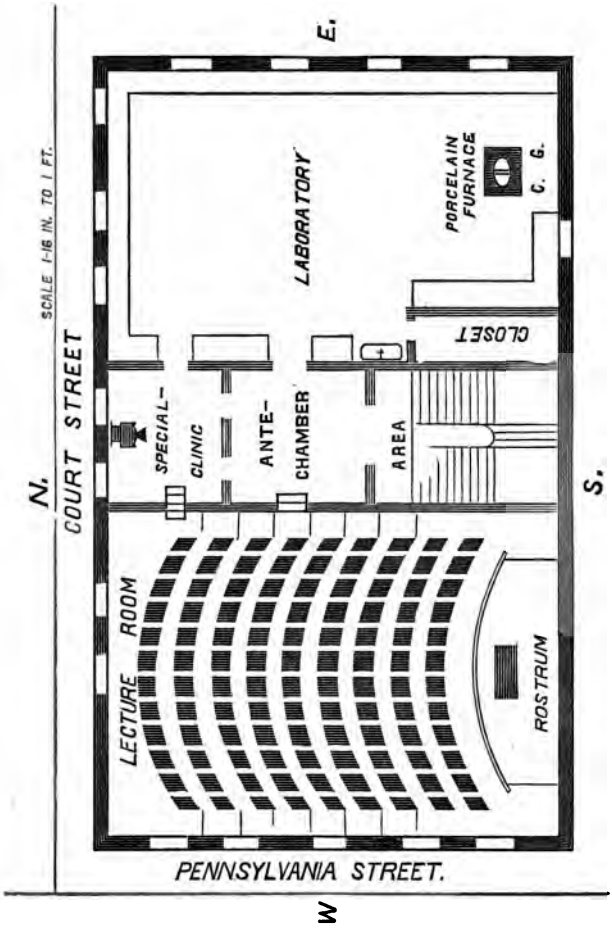
The standard of the Indiana Dental College is *merit*, in addition to attendance on the usual course of instructions and exercises.

The rooms in Thorpe Block proved too small to accommodate the class during the second session, consequently the Board of Trustees during the following summer (1880) secured the second and third floors of the Ætna Block, on Pennsylvania street, corner of Court street, where ample accommodations were obtained for very large classes.

The rooms of the College in Ætna Block are well lighted, handsomely finished, and provided with all approved modern devices and appliances that may be used to advantage in imparting instructions to dental classes.

A reference to the following cuts of the plan of the College will afford a fair idea of its accommodation and arrangement:


N.
COURT STREET
INFIRMARY
INFIRMARY
E.
SCALE 1-16 IN. TO 1 FT.
1-2
1-3
1-4
3-8
1-2
5-8
1-16
1-2
1 INCH
MUSEUM
FACULTY
LIBRARY
W.C.
AREA
S.
PENNSYLVANIA STREET
W.


N.
SCALE 1-16 IN. TO 1 FT.
COURT STREET
LECTURE ROOM
SPECIAL-
CLINIC
ANTE-
CHAMBER
LABORATORY
AREA
CLOSET
PORCELAIN FURNACE
C. G.
ROSTRUM
E.
S.
PENNSYLVANIA STREET.
W

OFFICERS OF THE COLLEGE.

TRUSTEES.

W. L. HEISKELL, President.....Indianapolis.
M. H. CHAPPELL, Vice-President.....Knightstown.
M. WELLS, Treasurer.....Indianapolis.
E. J. CHURCH.....Laporte.
T. S. HACKER.....Indianapolis.
ROBERT VAN VALZAH.....Terre Haute.
W. M. HERRIOTT.....Indianapolis.
S. T. KIRK.....Kokomo.
J. E. CRAVENS, Secretary.....Indianapolis.

FACULTY.

JOSEPH RICHARDSON, D. D. S., M. D.
Emeritus Professor of Principles of Prosthetic Dentistry.

JOHN H. OLIVER, M. D.
Professor of Anatomy.

JUNIUS E. CRAVENS, D. D. S.
Professor of Operative Dentistry.

EDWARD F. HODGES, M. D.
Professor of Physiology.

JOHN D. MORRISON, D. D. S.
Professor of Dental Pathology and Therapeutics.

JOHN N. HURTY, M. D.
Professor of Chemistry.

THOMAS S. HACKER, D. D. S.
Professor of Mechanical Dentistry.

MILTON H. CHAPPELL, D. D. S.
Professor of Oral Deformities.

CLINICAL PROFESSORS.

JUNIUS E. CRAVENS, D. D. S.
THOMAS S. HACKER, D. D. S.
JOHN H. OLIVER, M. D.
Clinical Lecturer on Oral Surgery.

An ample number of Demonstrators in attendance in Laboratory and Infirmary throughout the session.

GRADUATES, SESSION OF 1879 AND 1880.

ROBERT W. VAN VALZAH (*Valedictorian*)	Terre Haute, Indiana.
WILLIAM E. SWIGERT	New London, Missouri.
EDWARD J. CHURCH	Laporte, Indiana.
S. W. DENNIS, M. D. (*Honorary*)	San Francisco, California.

GRADUATES, SESSION OF 1880 AND 1881.

JOHN B. LOWE (*Valedictorian*)	Bedford, Indiana.
J. EDWARD WAUGH	Ft. Wayne, Indiana.
HARTWELL H. DEPEW	Salem, Indiana.
LINNÆUS J. ALLEN	Thorntown, Indiana.
ISHAM B. REMBERT	Natchez, Mississippi.
JOSEPH G. PARSONS	Grenada, Mississippi.
JAY C. WALTON	Fowlerville, Michigan.
DEWITT C. WEST	Elkhorn, Wisconsin.
CHARLES A. POOLER	Utica, New York.
LOUIS E. UHRICH	Blue Mound, Illinois.

GRADUATES, SESSION OF 1881 AND 1882.

F. M. HARRIS (*Valedictorian*)	New Albany, Indiana.
T. R. WOODARD	Knightstown, Indiana.
W. F. KENNEDY	Rushville, Indiana.
L. L. HINSHAW	Greensboro, Indiana.
W. W. SHRYOCK	Ft. Wayne, Indiana.
C. A. MURRAY	Bellefontaine, Ohio.
J. L. MAHAN	Bristolville, Ohio.
J. E. BODINE	Toledo, Ohio.
D. R. SMITH	Grayville, Illinois.
R. E. HENSHIE	Taylorsville, Illinois.
F. W. BLOMILY (*Second Prize*)	Elkhorn, Wisconsin.
W. M. RAMSDELL (*First Prize*)	Brooklyn, New York.
D. G. PARKER	Opelousas, Louisiana.
E. W. SHERIFF	Pueblo, Colorado.
F. SAWHILL (*Third Prize*)	Harvard, Nebraska.

RULES

FOR ADMISSION AND GRADUATION.

All students will be received and registered as juniors, but an examination will be held in December, at which time all those found competent will be permitted to enter a senior grade. All candidates for the degree must be of this grade.

All applicants for graduation are required to have at least a fair common school education.

TEXT BOOKS.

Richardson's Mechanical Dentistry.
Kingsley's Oral Deformities.
Salter's or Wedl's Dental Pathology.
Dalton's Physiology.
Gray's Anatomy.
Fowne's Chemistry—recent.
Dunglison's Medical Dictionary.

PROPERTIES.

Each student *must* be provided with one dozen napkins, a reasonable assortment of pluggers, excavators, nerve canal instruments, scalers, etc.,* laboratory tools and appliances, such as impression cups, files, scrapers, corundum and brush wheels, pliers, plate shears, riveting hammer, small bench vice, etc., all of which will be useful in practice. Many of the above items can be brought from home. They can be bought here very cheaply, at liberal discount from catalogue rates.

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*Students should provide themselves with forceps for extracting teeth.

FEES.

(INVARIABLY IN ADVANCE.)

Matriculation, payable each term,	$5 00
Lectures, Demonstrations and Materials,	95 00
	$100 00
Diploma fee,	25 00

Candidates for graduation must deposit the Diploma fee with the Secretary by the 1st of February. In case of any candidate failing to graduate, the Diploma fee will be returned to him.

MEMORANDUM.

Good board, near the College, $4 to $5 per week, including fuel and light.

There are no extra fees in the College Course.

Students, on arrival in the city, should call on the Secretary without delay.

Address all communications to

JUNIUS E. CRAVENS,
SECRETARY INDIANA DENTAL COLLEGE,
46 East Ohio Street. Indianapolis, Ind.

List of Persons Practicing Dentistry

IN INDIANA.

NAME.	RESIDENCE.	COUNTY.
Allen, N. H.	Crawfordsville	Montgomery.
Anderson, E. W.	Indianapolis	Marion.
Abbott, S. G	Fremont	Steuben.
Andrews, W. L.	Kokomo	Howard.
Armstrong, C. M.	Yorktown	
Ames, P. A	Terre Haute	Vigo.
Allen, H. H.	Thorntown	Boone.
Allen, F. E	Thorntown	Boone.
Armstrong, M. O.	Brookville	Franklin.
Allison, W. T	Bloomington	Monroe.
Aten Dr.	Martinsville	Morgan.
Albrecht M	Indianapolis	Marion.
Armstrong, M.	Pendleton	
Bashan, H. M.	Altin	
Beecher, A. C.	Butler	Dekalb.
Burrows, C.	Boxley P. O.	Hamilton.
Burkitt, F. M.	Plymouth	Marshall.
Bricker, C. O.	Newport	Vermilion.
Boyer, Jacob	Middleburg	Clay.
Beason, J. H.	Pendleton	Madison.
Burns, J.	Rockport	Spencer.
Bowerman, J. S.	South Bend	St. Joseph.
Bechler, A. C.	Lagrange	Lagrange.
Budd, J. W.	Logansport	Cass.
Beebe, E. K.	Lafayette	Tippecanoe.
Burt, E. V.	Lafayette	Tippecanoe.
Bowers, J. H.	Laporte	Laporte.
Bigelow, Dr.	Larwell	Whitley.

NAME.	RESIDENCE.	COUNTY.
Bartholomew, L. H	Terre Haute	Vigo.
Ballew, G. W	Terre Haute	Vigo.
Boyd, Ike	Valparaiso	Porter.
Baxter, J. W	Vevay	Switzerland.
Baily, J. S	Vernon	Jennings.
Briceland, D. J	Vandalia	Owen.
Barkley, A	Walkerton	St. Joseph.
Brown, G. A	Elkhart	Elkhart.
Brown, S. B	Ft. Wayne	Allen.
Blackwell, E. D	Crawfordsville	Montgomery.
Brown, D. N	Dublin	Wayne.
Bostee, Dr	Dales	Spencer.
Burton, J. T	Edinburg	Johnson.
Baldwin, S. G	Goshen	Elkhart.
Brenneman, W. S	Goshen	Elkhart.
Burns, C. C	Greensburg	Decatur.
Ballard, Dick	Grand View P. O	Spencer.
Baldwin & Olds	Albion	Noble.
Budd & Garner	Muncie	Delaware.
Baldwin, E. A	Covington	Fountain.
Berlin, A. R	Argos	Marshall.
Bird, M. A	Anderson	Madison.
Bertenwerfer, P. A	Evansville	Vanderburg.
Bledsoe, L. S	Jamestown	Boone.
Broadbeck, H. W	Lawrenceburg	Dearborn.
Billings, Dr	North Vernon	Jennings.
Burgess, C. C	Indianapolis	Marion.
Beeks, O. A	Indianapolis	Marion.
Ball, J. M	Indianapolis	Marion.
Convey, R. E	Hagerstown	Wayne.
Chappell, M. H	Knightstown,	Henry.
Caltron, J. V	Kingsbury	Laporte.
Camp, E. F	Grand View	Spencer.
Crumrine, W. K. M	Sweetzer	Grant.
Clark, J. W	Washington	Daviess.
Covert, G. W	Whiteland	Johnson.
Cubberly, D. P	Marion	Grant.
Crowell, W. P	Monticello	White,
Cook, E. C	Noblesville	Hamilton.
Covault, J. F	Montpelier	Blackford.
Crume, T. M	Peru	Miami.
Cunningham, A. B	Attica	Fountain.
Cast, G. W	Attica	Fountain.
Creditor, E. H	Angola	Steuben.
Covert, O. L	Bluffton P. O	Wells.

NAME.	RESIDENCE.	COUNTY.
Crain, J. W	Bloomington	Monroe.
Castman, G. C	Crown Point	Lake,
Cave, J. C	Columbus	Bartholomew.
Comstock, W. T	Columbus	Bartholomew.
Camp, J. T	Rockport	Spencer.
Connor, A. W	Rolling Prairie	Laporte.
Cook & Wright	Russiaville	Howard.
Cummins, D. E	South Bend	St. Joseph.
Clayton, J. R	Shelbyville	Shelby.
Collier, J. A	Sullivan	Sullivan.
Cummins, S. M	Elkhart	Elkhart.
Carlton, F. S	Elkhart	Elkhart.
Clark, L. W	Frankfort	Clinton.
Cloyle, J. D	Ft. Wayne	Allen.
Crigler, W. H. H	Covington	Fountain.
Cottingham, A. B	Decatur P. O	Adams.
Carmer, L. L	Lowell P. O	Lake.
Church, E. J	Laporte	Laporte.
Carter, S. C	Liberty	Union.
Condery & LeFevre	Union City	Randolph.
Coke, Allen	Bristol	Elkhart.
Cave, Dr	Paris	Jennings.
Cope, (M. D.) J. P	Vernon	Jennings.
Cravens, J. E	Indianapolis	Marion.
DeHart, W. M	Logansport	Cass.
Davis, J. E	Lafayette	Tippecanoe.
Duncan, S. F	Lewisville	Union.
Devilbiss, A. L	Decatur P. O	Adams.
DeLeMatyr, R	Petersburg	Pike.
Deputy, A. C	Noblesville	Hamilton.
Davis, W. H	New Washington	
Durr, C. C	Plymouth	Marshall.
Driscoll, W. E	Bedford	Lawrence.
Davis, Dr	Battle Ground	Tippecanoe.
Dales, G. R	Hartford City	Blackford.
Dillon, E	Ireland	Dubois.
Detricht, R. M	Centerville	Wayne.
Dumont, E. A	Danville	Hendricks.
Dalzell, David E	Logansport	Cass.
Doss, (or Gross), John A	Nisoton Station	Orange.
Elliott, Samuel	Hagerstown	Wayne.
Eddleman, F. C	Greensburg	Decatur.
Eggleston, W. H	Warsaw	Kosciusko.
Edmonds, J. H	Valparaiso	Porter.
Elson, R	Auburn	Dekalb.

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[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Ivan.
[illegible]	[illegible]	[illegible]
[illegible]	Indianapolis	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]

NAME.	RESIDENCE.	COUNTY.
Hutchinson, F	Evansville	Vanderburg.
Hartman, S. B	Ft. Wayne	Allen.
Hargrave, M. F	Petersburg	Pike.
Harmon, C	Portland	Jay.
Hewitt, W. H	Richmond	Wayne.
Henderson, W. J.,	Richmond	Wayne.
Harris, I. N	Rushville	Rush.
Hayes, Webb	Rushville	Rush.
Hanford, W. H	South Bend	St. Joseph.
Harper, Jno	Mt. Vernon	Posey.
Hagre, W. J	Maysville, Harlan P. O	Allen.
Holbrock, H. J	North Manchester	
Hamiston, J. J	New Castle	Henry.
Hume, A. C	Plymouth	Marshall.
Harriman, A. B	Aurora,	Dearborn.
Harrod, J. M	Austin	Scott.
Hayes, W. C	Bristol	Elkhart.
Herron, A. P	Winchester	Randolph.
Hutchins, D	Wabash	Wabash.
Hall, W. H	Terre Haute	Vigo.
Hindman, W. M	Vincennes	Knox.
Howard, E. B	Greenfield	Hancock.
Hurst, J. O	Zionsville	Boone.
Hamilton & King	Tipton	Tipton.
Hess & Mothershead,	Columbus	Bartholomew.
Holden, Jno. W	Cloverdale	Putnam.
Harlan, Dr. & Son	Danville	Hendricks.
Huddleson, H. P	Dublin	Wayne.
Harriman, S. E	Lawrenceburg	Dearborn.
Hurgan, H. C	Newburg	Warrick.
Hathaway, Mills	Peru	Miami.
Hunt, P. G. C	Indianapolis	Marion.
Hacker, T. S.	Indianapolis	Marion.
Heiskell, Wm. L	Indianapolis	Marion.
Howland, J. C	Indianapolis	Marion.
Helms, L. A	Indianapolis	Marion.
Immel, J. C	Lebanon P. O	Boone.
Irvin, J. D	Corydon	Harrison.
Igo, E. A	Lawrenceburg	Dearborn.
Jackson, V. D	Jeffersonville P. O	Clark.
Jones, J. F	Russiaville	Howard.
Johnson, S. B	Waterloo	Dekalb.
Jackson, J. L	Walkerton	St. Joseph.
Johnson, W	Vevay	Switzerland.
Johnson, G. E	Albion	Noble.

NAME.	RESIDENCE.	COUNTY.
Jordan, A	Angola	Steuben.
Jay, Daniel	Marion	Grant.
Jay, J. W	Richmond	Wayne.
Jordan, L	Delphi	Tippecanoe.
Jordan, T	Lagrange	Lagrange.
Jenison, J. K	Indianapolis	Marion.
Johnson, A. R	Columbia City	Whitley.
Johnson, B. F	College Corner	Ohio.
Kennedy, J. G	Indianapolis	Marion.
Knapp, I	Ft. Wayne	Allen.
Knapp, E	Evansville	Vanderburg.
Kelly, I. C	Rensselaer	Jasper.
Kivette, Jno	Sullivan	Sullivan.
Kindley, W. F	Dublin	Wayne.
Keltner, F. L,	Milford	Kosciusko.
King, R. R	Vincennes	Knox.
King, Dr., of Hamilton & King	Tipton	Tipton.
Keightly, A. T	Greencastle	Putnam.
Kirk, S. T	Kokomo	Howard.
Keepers, A. C	Clinton	Vermillion.
Kirkendall, Fred'k	Rochester	Fulton.
Lincoln, C. O	Terre Haute	Vigo.
Lee, Isaac	Bourbon	Marshall.
Lybyer, T. H	Brazil	Clay.
Lamb, Dr	Brownstown	Jackson.
List, G. A	Booneville	Warrick.
Lanning, A	Salem	
Lloyd, W. J	Portland	Jay.
Lunt, A	Rockport	Spencer.
Leighter, E. T	Dayton	Tippecanoe.
Littler, J. C	Dunkirk	Jay.
Lewis, S. B	Evansville	Vanderburg.
Long, G. W	Fort Wayne	Allen.
Loring, W. H	Mishawaka	St. Joseph.
Landon, L. L	Lebanon	Boone.
Lawrence, M. E	Grand View	Spencer.
Lombard, H	Michigan City	Laporte.
Ludlow, Dr	Richmond	Wayne.
Lefevre, Dr., (Cowdery & L)	Union City	Randolph.
Martin, W. A	Goshen	Elkhart.
McDonald, B. P	Goshen	Elkhart.
Morrison, H. H	Greencastle	Putnam.
Miller, N	Huntington	Huntington.
McBride, N. N	Jeffersonville	Clark.
Moyer, W. N	Kendallville	Noble.

NAME.	RESIDENCE.	COUNTY.
Martin, T. H.	Lebanon	Boone.
Manlove, H. T.	Logansport	Cass.
Mitchell, J. C.	Loogootee	Martin.
Morgan, W. L.	Lebanon	Boone.
Manor, Chas	Muncie	Delaware.
McMechan, T.	Crawfordsville	Montgomery.
Meredith, J. W	Frankfort	Clinton.
Muire, J. H.	Rushville	Rush.
Middleton, C. H.	South Bend	St. Joseph.
Morgan, J. C.	Sullivan	Sullivan.
Moore, W. F.	Rochester	Fulton.
McPheeters, S. H.	Mitchell	Lawrence.
Morris, P. W.	Mitchell	Lawrence.
McClain, J. S.	Marion	Grant.
Miller, C. E.	Montezuma	Park.
Morrell, W. F.	New Albany	Floyd.
Monroe, G. H.	Augusta	Pike.
Merryman, Dr. (of Robertson & M).	Bluffton	Wells.
McGee, B. A.	Bloomington	Monroe.
Macey, Henry	Booneville	Warrick.
McKinney, J. W	Booneville	Warrick.
Martin, G. W.	Bruceville	Knox.
Morris, G. N.	Canton	Washington.
Marshall, David	Carthage	Rush.
McLeon, D. A.	Wabash	Wabash.
Merryman, E. J	Bluffton	Wells.
McDaniel, J. A.	Thorntown	Boone.
McBriney, E.	Williamsport	Warren.
Mayall, Dr.	Cambridge City	Wayne.
Mothershead, Dr., (of Hess & M.)	Columbus	Bartholomew.
Morgan, J. Rollins	Bedford	Lawrence.
McGown, C. M	Waveland	Montgomery.
Morrison, Jno. B.	Indianapolis	Marion.
Morris, J. A	Indianapolis	Marion.
Nutt, J. E.	Bridgetown P. O.	Parke.
Nesbit, J. A.	Alfont	Madison.
Nickolson, D. D.	Salem	
Nevins, G. F.	South Bend	St. Joseph.
Newton, E. N.	Richmond	Wayne.
Nicholson, Wm	Mooresville	
Nichols, T. M.	Indianapolis	Marion.
Overstreet, W. G.	Greencastle	Putnam.
Overholtzer, D. L.	Logansport	Cass.
O'Bear, Add	Brownsburgh	Boone.
Olney, F. E.	Warsaw	Kosciusko.

NAME.	RESIDENCE.	COUNTY.
Olds, Dr., (of Baldwin & O.)	Albion	Noble.
Orm, Dr. W. J	Goodland	
Pierce, J	West Liberty P O.	Howard.
Puckett, G. L	Winchester	Randolph.
Puffenberger, J	Walkerton	St. Joseph.
Purveyance, E. D	Attica	Fountain.
Porter, Jno	Acton	Marion.
Pinnick, N. F	Newton Station	Orange,
Pollock, H. G	Orion P. O	Kosciusko.
Pomphrey, L. H	Princeton	Gibson.
Price, P. P	Evansville	Vanderburg.
Powell, J. F	Ladoga	Montgomery.
Pifer, W. H	Lafayette	Tippecanoe.
Pattison, J. K	Lafayette	Tippecanoe.
Powers, J. W	Madison	Jefferson.
Phillips, D. J	Hazelton	Gibson.
Pleas, M. G	Kokomo	Howard.
Parsons, W. R	Huntsville	Randolph.
Pretlow, Joseph J	Farmland	Randolph.
Purcell, A. E	Indianapolis	Marion.
Parsons, J. G	Indianapolis	Marion.
Quackenbush, D. T	Crown Point	Lake.
Rogers, D. H	Charlestown P. O	Clark.
Righter, O. W	Carthage	Rush.
Robertson & Merryman	Bluffton	Wells.
Richardson, J	Terre Haute	Vigo.
Richardson, S. C	Terre Haute	Vigo.
Roark, L. D	Milton	Wayne.
Ross, C. G. & Bro	Oxford	Benton.
Rex, M. M	Rochester	Fulton.
Reese, D. F	Evansville	Vanderburg.
Richardson, Jas	Franklin	Johnson.
Richards, Jno	Forest	Whitley.
Badcliffe, B. T	Fort Branch	Gibson.
Robertson, J. D	Dublin	Wayne.
Russell, D. J	Lima	Lagrange.
Rigennas, E. G	Hope	Bartholomew.
Riggs, C. B	Rushville	Rush.
Reid, R. C	Anderson	Madison.
Reily, Dr	Muncie	Delaware.
Stewart, J. F	Greensburg P. O	Decatur.
Sessions, N	Huntington	Huntington.
Slick, C. W	Mishawaka	St. Joseph.
Sites, H. C	Fort Wayne	Allen.
Shaefer, G. O	Fowler	Benton.

NAME.	RESIDENCE.	COUNTY.
Stanley, W. C	Dublin	Wayne.
Spencer, W. G	Decatur	Adams.
Shelly, W. F	New Castle	Henry.
Stewart, N	Newton Station	Orange.
Steese, Miss Dr. F. D	Plymouth	Marshall.
Smith, E	Mt. Vernon	Posey.
Sherman, G. L	Mango	Lagrange.
Stewart, J. B	Milroy	Rush.
Smith, J. R	Winchester	Randolph.
Sackett, E. G	Wabash	Wabash.
Stevenson, A. L	Wabash	Wabash.
Southwick, H. B	Westville	Laporte.
Stall, J. G	Union City	Randolph.
Shroyer, G. W	Brownsville	Union.
Shields, S. W	Brownstown	Jackson.
Sedgewick, A. J	Austin	Scott.
Sturgess, T	Bluffton	Wells.
Sherwin, Dr. H. E	Rochester	Fulton.
Swigirt, Wm. E	Spencer	Owen.
Steadman, J. J	Laporte	Laporte.
Shephard, Wm. J	Pennville	Jay.
Sutherland, Wm	Indianapolis	Marion.
Smith, Chas. P	Indianapolis	Marion.
Stevenson, Will H	Wabash	Wabash.
Tyner, W. C	Aurora	Dearborn.
Talbott, D. L	Westville	Laporte.
Talbott, Mrs. Dr	Plymouth	Marshall.
Trout, D. G. M	Portland	Jay.
Trueblood, A. W	Paoli	Orange.
Thomas, O. H	Pendleton	Madison.
Thomas, Owen	Richmond	Wayne.
Trough, M. G	Remington	Jasper.
Taylor & Vesley	Logansport	Cass.
Talbert, C. S	Lotus	Union.
Turpin, D. B	Hartford City	Blackford.
Tripp, A. W	Jalapee	Grant.
Teal, J. M	Kendallville	Noble.
Tigleman, M	Evansville	Vanderburg.
Talbert, C. S., Jr	Indianapolis	Marion.
Ulery, J. P	Lawrenceburg	Dearborn.
Underwood, W	Washington	Daviess.
Vesley, Dr	Logansport	Cass,
Vesey, G. E	Butler	Dekalb.
Van Sant, F. W	Bloomfield	Greene.
Van Valzah, Robert	Terre Haute	Vigo.

NAME.	RESIDENCE.	COUNTY.
Van Valzah, R. W.	Terre Haute	Vigo.
Wilson, W. E.	Greensboro	Henry.
Wagoner, A. N.	Huntington	Huntington,
Wagoner, T. P.	Knightstown	Henry.
White, J. W.	Knightstown	Henry.
Walls, W. T.	Madison	Jefferson.
Wilkinson, L. P	Madison	Jefferson.
Widup, H. C.	Lagrange	Lagrange.
Wilson, N. H	Loogootee	Martin.
Waite, W. H.	Crawfordsville	Montgomery.
Watson, Dr. C. D.	Covington	Fountain.
Wiswell, D. D.	Ft. Wayne	Allen.
Wirt, J. D	Frankfort	Clinton.
Wilde, H.	Evansville	Vanderburg.
Wilde, O. E.	Terre Haute	Vigo.
Williams, I. L.	Salem	
Walker, D. A.	Salem	
Williams, H.	Spencer	Owen.
Wilson, W. N.	Richmond	Wayne.
Webster, W. R.	Richmond	Wayne.
Williams, J. B.	Richmond	Wayne.
Wirt, W. N.	Rockville	Parke.
Way, S. C.	Mt. Etna	Huntington.
Wirt, Dr.	Monticello	White.
Winser, W. R.	Millersburg	
Wilson, H. S.	Newtown	Fountain.
Wright, A. W	Winchester	Randolph.
Welch, W. H. H	Worthington	
Wilson, P. H.	Worthington	
Whittington, S. T.	Waveland	Montgomery.
Watkins, N.	Xenia	Miami.
Wilson, T. L.	Battle Ground	Tippecanoe.
Wickwire, A.	Angola	Steuben.
Wolf, W. J.	Bowling Green	Clay.
Wilson, J. F.	Charlestown	Clark.
Wilson, C. S.	Cambridge City	Wayne.
Wright, Dr.	Russiaville	Howard.
Wells, Merit	Indianapolis	Marion.
Wells, Graham A	Indianapolis	Marion.
White (colored), Wm	Indianapolis	Marion.

Any parties discovering errors in the above list will confer a favor by notifying the undersigned at once of the same, with corrections.

J. E. CRAVENS,

46 East Ohio St., Indianapolis.

MAR 31 1967

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186